



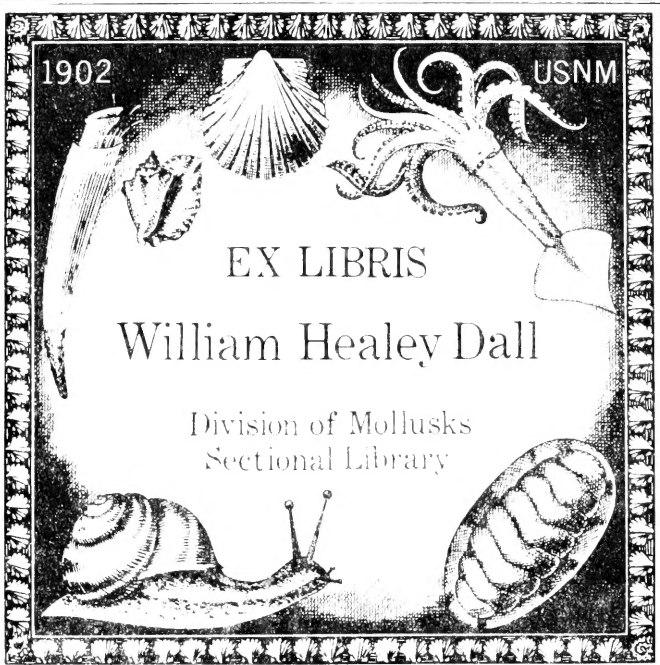
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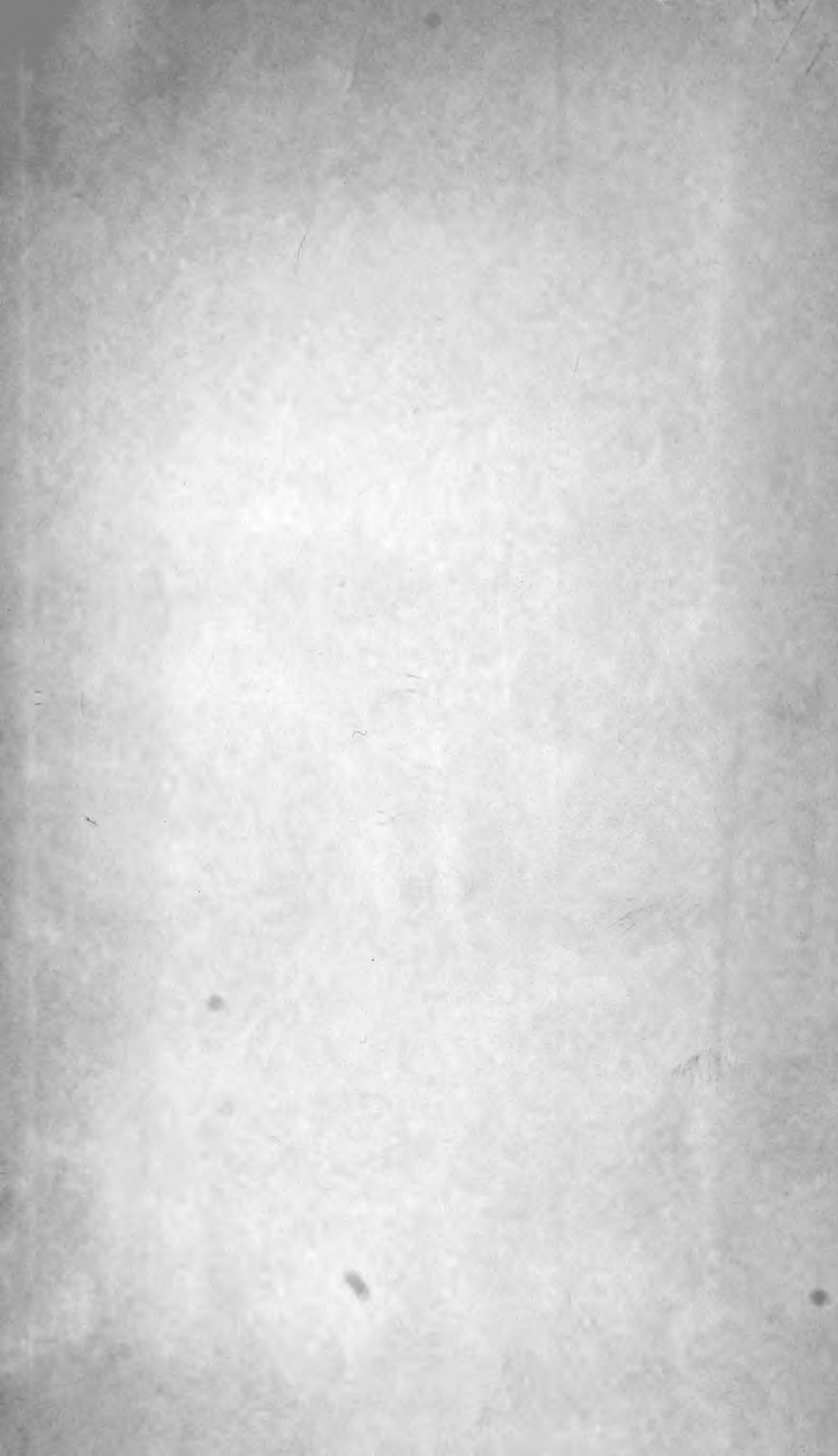
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# LINNÆI CONCHYLIA.

THE

SHELLS OF LINNÆUS,

DETERMINED FROM HIS MANUSCRIPTS AND COLLECTION.

BY

SYLVANUS HANLEY, B.A., F.L.S.,

AUTHOR OF

DESCRIPTIVE AND ILLUSTRATED CATALOGUE OF RECENT BIVALVES, MONOGRAPH  
OF TELLINA, BRITISH MOLLUSCA (SHELL PORTION), ETC. ETC.

ALSO,

AN EXACT REPRINT

OF THE

VERMES TESTACEA OF THE 'SYSTEMA NATURÆ'  
AND 'MANTISSA.'

LONDON:

WILLIAMS AND NORGATE,

HENRIETTA STREET, COVENT GARDEN.

1855.

PRINTED BY  
JOHN EDWARD TAYLOR, LITTLE QUEEN STREET,  
LINCOLN'S INN FIELDS.



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~~184~~  
~~Mollusks~~

## INTRODUCTION.

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WHEN a widely extended knowledge of the ever-varying forms of animal life had compelled the student of zoology to augment the generic groups on a similar scale of magnitude, amid the shock of contending systems, many interesting species, previously well known to the older naturalists, sunk into obscurity. The revolution accomplished, and the last feeble defenders of a system, which Linnæus himself would have been the first to modify in conformity with the enlarged views which an increased acquaintance with natural objects would have produced, being silenced, if not convinced, attention was again directed to those almost forgotten shells which the followers of the French school of Conchology had omitted to cite in illustration of their genera. Deshayes, in France, and Gray, in England, were the foremost in the field; and to their profound knowledge of the writings of their predecessors is due the rescue of many a half-forgotten shell from the oblivion into which it was falling, and the restoration of their original names to many of the species published by the old German authors. The just and enlightened views entertained by these truly erudite naturalists have kindled so widely spread a spirit of research, that the species of Born, Spengler, Chemnitz, Schröter, Martyn, Gronovius, and other less notable conchologists, will ere long be catalogued under their new generic appellations. Until this shall be definitively accomplished, the continual shifting of names, from the preoccupation of specific epithets, will entail a serious and never-ending toil upon all who respect the rights of priority, and will burden the memory with a chaotic mass of synonyms. Since, then, by almost universal agreement, the publication of the tenth edition of the 'Systema Naturæ' (that

in which species were first defined) has been fixed upon as the starting-point of zoological nomenclature, it is of paramount importance to first ascertain what were the objects really described by the great founder of binomial Conchology.

Vast critical acumen has been displayed by Philippi, Menke and Deshayes, in eliminating many of the more doubtful Linnean species, and, had they enjoyed access, with a like ample leisure for continuous research, to the same sources from whence the matter in these pages has been derived, the present disquisition would have been superfluous.

The manuscripts and private collection of Linnæus were long ago transmitted to England, yet the zoological portion, at least, was rarely consulted, until the enthusiasm of the writer of these 'Notes' had directed general attention to their importance. This deliberate neglect was not without reason, since, such was the bewildering and apparently inextricable confusion of specimens, that augmented errors would alone have resulted from any fitful attempts at identification. It was only by examining the cabinet as a whole, and by a tedious but necessary analysis of its entire contents, that any trustworthy conclusions could be arrived at; and, even then, such obliterations have time, and such enlavelment has the carelessness of a former possessor effected, that the fruits of the present investigation bear little proportion to the years of toil which have been expended in obtaining them.

Had the cabinet alluded to passed direct from the hands of Linnæus to the Museum of the Linnean Society, where it now reposes (a venerated relique of the immortal Swede), without any intermediate possession by a third party, the sole additions to the typical examples coeval with the date of his publications would have been those he had acquired subsequently to the appearance of the last edition of his 'Systema;' and as these were almost invariably found packed in separate papers or pill-boxes (often indeed indicated as undescribed), and not distributed, like the original types, in the metallic receptacles, their presence would have caused but little impediment to any determined search. The collection, however, did not reach the Society direct, but was held for a while by the noted botanist Sir James Smith, during whose custody numerous other specimens were mingled with the ancient ones. This ill-advised



admixture has not merely augmented to an almost inconceivable degree the difficulties of investigation, but has too frequently proved fatal to any accurate decision. Nevertheless, much valuable information may be gleaned from a diligent study of this collection.

The original specimens, when large enough to permit it, had been inscribed by Linnæus either with their names or with numerals corresponding to their position in his 'Systema;' the smaller ones had been deposited in tin boxes, marked in a like manner; oftentimes, indeed, the numerals were written on both shells and boxes. It is worthy of remark, that these numerals more frequently corresponded to the series of the tenth than of the twelfth edition, a fair ground for believing that these shells were not merely his erroneous after-impressions of his own species, but were admitted and recognised types when the final edition was printed.

In the determination of species, we may hold the marked shells to be conclusive testimony, whenever they accord with the published descriptions; sometimes, however, two shells (or boxes) may be found with a like set of cyphers, a casualty resulting either from the different numerical location of species in the two principal editions of the 'Systema,' or from regarding distinctions as varietal, which the nicer discrimination of modern science has proved to be essential. In the former event no practical difficulty can occur, as the shells, for the most part, belong to different genera, and are utterly dissimilar; in the latter case, that individual must be reputed the type which corresponds more accurately with the description and synonymy.

The authority of the unmarked specimens in the marked tin boxes is less constant. The carelessness of some hasty examiner has occasionally misplaced an example (a source of error averted in more recent times by the discipline of the Society, which requires the presence of the curator during each inspection of the drawers): the intruder, however, may be readily detected, by a careful comparison of the entire contents of the case with the several descriptions of the indicated species in the various works of our author. The ink, too, has faded or become partially obliterated from many of both specimens and boxes. Should it prove possible, however, to decypher two, or even one (if it be the final one), of the three original numerals,

the erased numeral or numerals may generally be deduced ; for knowing, from the simple fact of its having been written on, that the object (be it box or specimen) is typical or type-containing, we are enabled, by determining the generic position of the example in the Linnean arrangement, to so greatly reduce the limits of according numbers, that what with certain of the species having been clearly ascertained, and what with the specified characters of others being utterly dissimilar, the possibilities will rest between two or three at the utmost, and a final decision may be accurately arrived at through a comparison of the specimen with the descriptions and figures of this small remainder : for although the Linnean diagnoses are indisputably too brief to distinguish a shell from subsequently discovered allied congeners, their antithetical style was especially framed (and is admirably adapted) to separate the few known species of the 'Systema' from each other.\*

Were all the shells thus comparatively easy of identification, a few months' labour would have sufficed for the scrutiny : but, unfortunately, all traces of writing have disappeared from one-half at least of both boxes and specimens. One method, and a right wearisome one, alone remained. Linnæus has left us a catalogue of his shells, and we know that the species in his list (a very full one) are all distributed in one or other of the drawers of his cabinets. On carefully comparing the description of any sought-for species with every specimen in his collection, we shall rarely, if ever, find more than half-a-dozen whose characters will at all approach the brief essentials of the definition. Of these six, two alone will perchance be represented by the figures cited in the synonymy, and probably one alone will agree with both figures and description. In such an event, we may fairly regard that individual as the lost type, inasmuch as it is the sole shell in the entire collection which

\* To illustrate our meaning more plainly, let us imagine an extreme case. Suppose upon an *Helix ericetorum* we described a central 8, with vestiges of an unknown figure on either side of it. Of the numerals from 1 to 7, by which that 8 could have been preceded, the generic characters of the shell exclude all but 6 ; of the ten cyphers which may follow, 0, 1, 2, 8, 9 pertain to species already determined : the great magnitude attributed to (68)4, the utterly dissimilar shapes to (68)5 and (68)7, and the narrow perforation to (68)6, forbid all thought of them : the characters of 683, on the contrary, most perfectly agree.

perfectly coincides with the diagnosis as further defined by the cited delineation. In consequence, however, of the addition to the original examples which has formerly been deplored, one is frequently baffled, after an infinity of pains-taking, through the parity of pretensions exhibited by the two or three final claimants (the residuum of the analysis) to the specific appellation. Where the balance of conflicting testimony is even, tradition (the general assent of authors to a supposed identification) should have due weight in the preservation of established names.

Locality, that great auxiliary in ascertaining the names of modern species, may also be taken into account, but its importance must not be overrated, since, in the infancy of Natural History, few objects, on their reception into a museum, were supplied with due credentials as to their nativity. The localities mentioned in the 'Systema' were usually drawn from the works referred to in the synonymy, and must stand or fall with the synonyms themselves. Shells described originally, likewise, without any habitat appended, may occasionally have received a false one in the final edition, from an erroneous impression of their identity with others subsequently received from a known quarter. Nevertheless the locality will oftentimes guide us to a correct conclusion, as in the case of species indigenous to Sweden, or such as are authenticated by Brander (the Consul at Algiers), Zoega, &c. Moreover, since we now possess a tolerable knowledge of the geographical distribution of the *Testacea*, the occurrence of any specimen from a land unvisited before the year 1766 would throw the greatest doubt upon its typical claims. The published and unpublished correspondence of our author reveals some of the sources from which he drew his collection.

In former days the most recognisable figure of those cited by Linnæus was selected as typical, little regard being paid to the description. The reverse of this facile process is now acknowledged to be correct, the figures being subsidiary, and only of authority when in accordance with the diagnosis, and then chiefly as further defining the species by contracting the too inclusive characters which result from the brevity of style affected by our author: for in the event of not finding among his books an accurate representation of a shell (at that period many were

yet unfigured), he was wont to indicate, as illustrative, the nearest approximation to it in size and general appearance that he could discover. Hence it not unfrequently happens that he has quoted figures in 1758 (ed. 10), when his library was less richly stored), which eight years afterwards (ed. 12), with a wider access to the costly iconographies (Seba, Regenfuss, &c.) of his day, he has either repudiated or has virtually nullified by subsequent additions. This correction or alteration of his synonymy renders it very difficult at times to say which of two shells, that are alike endowed with the scanty characteristics demanded by the text, the one being that represented in the majority of engravings cited in the earlier edition, the other agreeing with all the new ones quoted in the later publication, is to be regarded as the type of the species: in other words, whether the laws of priority forbid (an author's relation to himself being held equivalent to that which he bears to others) that he should change or amend that which he has once delivered to the public. My own impression is that, although it is not expedient to permit the addition of subsequent synonyms to affect the name of an object already clearly defined by wholly harmonising references, yet that in all cases the annexation of further limiting characteristics, provided they be not adverse to the earlier ones, should be regarded as explanatory of the original views of our author, and thus, in respect to descriptive or direct definition, the final edition should be regarded as the standard: for, although the arrangement of the 'Museum Ulricæ' seems to have been effected so independently of his more general work, that the shells designated by the same name in these two publications are oftentimes perfectly distinct, it does not appear that our author wilfully changed his ideal of a species in the editions of his 'Systema.' The discrepancies of pictorial or indirect definition have resulted from citations of illusive engravings, quoted, in default of finding better illustrations, as the nearest approximations in general aspect to the specimens which Linnæus was describing.

Wherever the details of a species in the 'Museum Ulricæ' clash with the essentials specified in the 'Systema' we must recollect that, unless the shell in the Dronningen Museum be expressly referred to (as M. U.) in anticipation of its publication in that descriptive catalogue, the species defined in the tenth

edition of the 'Systema' has priority. With very few unrecorded exceptions, the whole of the shells enumerated in that edition were characterised from examples in our author's private collection, as appears from the list appended to his interleaved copy of that publication. Hence, whenever a marked specimen is found in his cabinet, it may, provided, as is usually the case, it correspond to its description in the 'Systema,' be fearlessly regarded as the type, more especially should the adjudication coincide with the general opinion of former conchologists; for in all cases, where the balance of testimony is nearly even, I would yield to the popular opinion, not alone from a desire of avoiding all unnecessary changes of nomenclature, but because it is far from improbable that even as the collectors of the present age are wont to identify their specimens by comparing them with those in the typical collections, so, in the earlier period of conchology, the cabinet now alas! so confused in its arrangement was once the fruitful source of a like determination of species: hence the opinions of the older conchologists descend to us with all the force of tradition.

Three interleaved copies of the 'Systema Naturæ,' in the library of the Linnean Society, have afforded assistance in elucidating the more ambiguous species, and in strengthening one's convictions upon those more clearly determined. The manuscript notes to the tenth edition were evidently the basis for the changes in the subsequent publication, and prove occasionally useful for the correction of typographical blunders, as well as explanatory of the less clear passages in the description of the additional species which were finally introduced, the intended diagnosis being often couched in different words, though with the same meaning. Far more important, however, is that copy of the twelfth edition which was corrected and enlarged by Linnæus for his projected thirteenth edition. The first volume of Martini's 'Conchylien Cabinet,' besides other copiously illustrated works upon Zoology, having been published previous to our author's death, though posterior to his 'Magnum Opus,' have enabled him to augment his previously scanty references to accurate delineations; and these additional synonyms prove frequently decisive, where doubt previously existed, of the species actually designed by the great founder of systematic zoology. The third copy was the one possessed (ed. 12) by the

ill-fated son of Linnæus, which is identical, or nearly so, with the manuscript of Solander, the esteemed conchological pupil of the great master. It is serviceable, chiefly, from containing a plain transcription of the manuscript remarks in the copy just mentioned; for his father's writing, always crabbed, is at times perfectly illegible, from the porous nature of the paper he wrote on. The opinions, too, of one who had inspected the collection in its pristine and more perfect condition, are not undeserving of consideration. The acquisition by the Linnean Society of the books habitually used and quoted by the great systematist, to the engravings in which are attached, in his own handwriting, the names by which he has designated the delineated shells, has at times proved useful in correcting the typographical errors of citation which disfigure the pages of his various productions.

The works of all who have paid attention to the elucidation of the Linnean species have been sedulously consulted; and the author, whilst proceeding by a different and independent path of inquiry, has felt gratified on so frequently arriving at similar conclusions, both manuscript and specimens being almost invariably confirmatory of those careful inductions which had taken place without access to either.

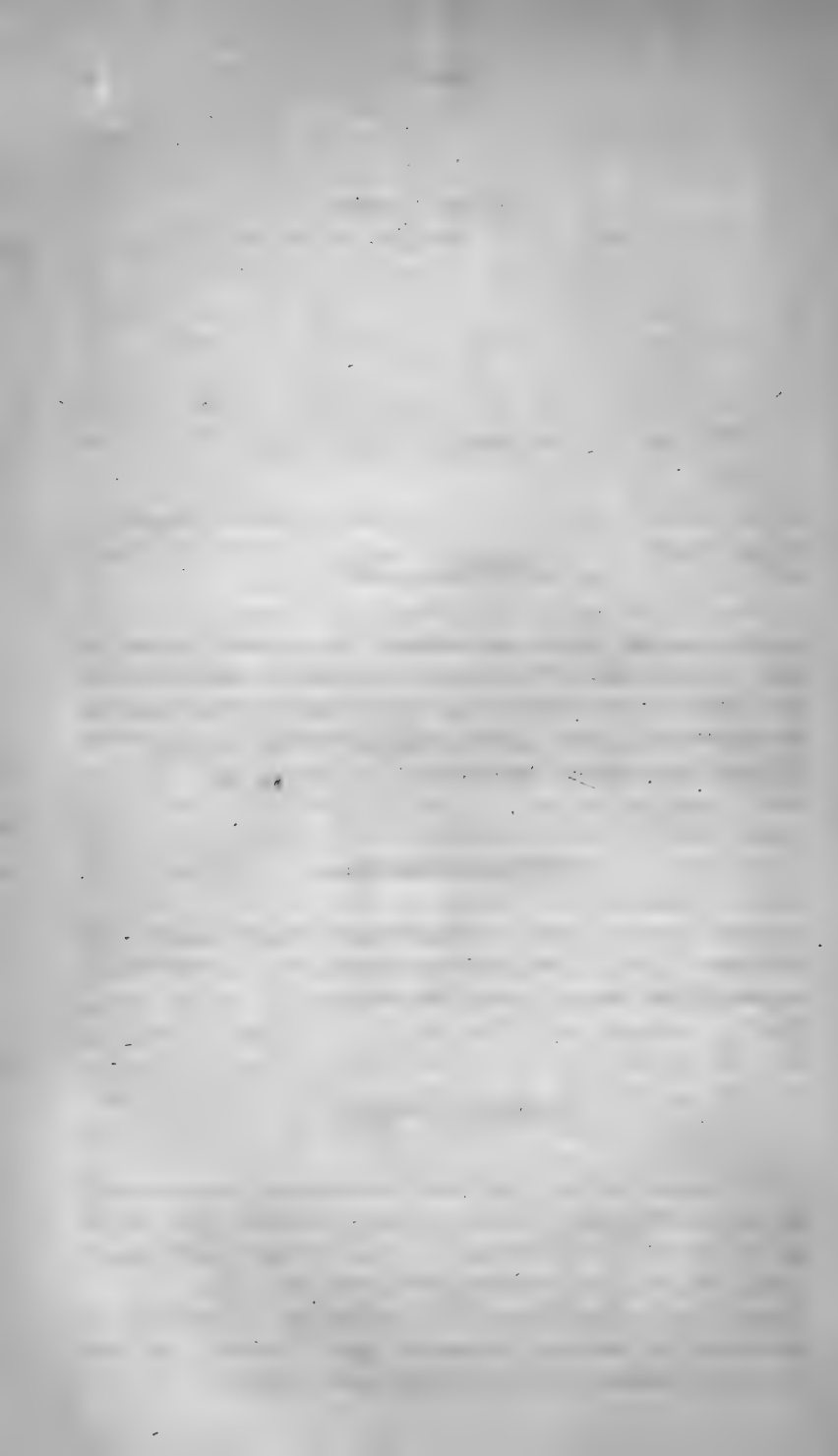
As naturalists of even the highest capacity differ greatly in their views of the extent of variation permitted to each species, and the increasing fabrication of new genera for the smaller groupings threatens to render the Lamarckian system as obsolete as the Linnean, I have endeavoured to further illustrate my meaning by unchanging figures rather than by fleeting names. Great pains, indeed, have been bestowed in selecting those illustrative engravings which most resembled the actual specimens: hence the risk is avoided of naturalists being misled through any possible ignorance on my part of the modern names of species, — a fault, however, guarded against, I trust, by my undivided study of the *Testacea* for a long period of years, my examination of nearly all the public Museums of Europe, and a correspondence or acquaintance with the majority of the more eminent living writers upon the subject.

The long delay in the appearance of this work (which was all but completed five years ago), and the free communication of the results of my studies to my brother naturalists, has, I fear,



deprived these annotations of the freshness of novelty. Indeed a small portion of them (the turreted *Turbines*) has already been published (May 19, 1849), yet, as twelve copies only were printed, it may reasonably be presumed that the majority of my readers have not perused it. The advantage of possessing in one work the conclusions arrived at respecting *all* the Linnean shells collectively can scarcely fail to be appreciated by the scientific student: the exact reprint, too, of the 'Vermes Testacea,' with the double paging, which will enable him to find the many references of authors to the 'Systema' and 'Mantissa' with the same facility as in the original twelfth edition, and thus to dispense with the purchase of the five volumes from which it is extracted, must prove useful to that section of naturalists which devotes its exclusive attention to Conchology.

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## SPECIES OF THE SYSTEMA.

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### CHITON.

FIVE more species of *Chiton* are present in the twelfth than in the tenth edition,—to wit, *fascicularis*, *squamosus*, *ruber*, *albus*, and *cinereus*; a marked improvement, likewise, may be discerned in the descriptions of *tuberculatus* and *aculeatus*, to which the terminal paragraphs were added. The term “corpus” is used for the leathery rim in which the valves are imbedded: even thus early the value of the margin for divisional purposes was appreciated. The localities authenticated by Zoega, Brander and König may be trusted to.

### *Chiton hispidus.*

Of the sole descriptive characteristics “sexvalvi, striatâ,” by which this shell is sought to be defined, the former is merely accidental, the latter common to the majority of the genus. Taking the name itself “*hispidus*” into account, and applying it to the margin solely, a third and far from insignificant limitation may be obtained; and as the other three original species are all named from the character of rim, the fourth may fairly be presumed to have been so likewise. Schröter, however, whose *Chiton hispidus* (‘*Einleitung in die Conchylien Kenntniss*,’ vol. iii. p. 493, pl. 9, f. 18) seems a very bold and rather unfortunate attempt at identification, appears to infer that the term was applied from the prickly nature of its striæ.

No light is obtained from the manuscripts or collection of our author, who did not possess the shell, which, as a Linnean species, had better be rejected from our catalogues.

## *Chiton tuberculatus.*

In this shell, also, the first moiety ("septemvalvi") of the original diagnosis is valueless. Other more valid characters, however, are here mentioned,—numerous enough, indeed, for clear definition in most genera, yet not so in this especial one, which requires an elaborate detail of the peculiarities of sculpture. As the expression callous tubercles ("tectum supra tuberculis calloso-elevatis") is not more inappropriate than scales for the bead-like masses which clothe the connecting ligament in the "scaly-margined" *Chitons* of modern terminology, and "tectum" is peculiarly significant of their densely packed array, the *tuberculatus* of Linnæus was referred to that group by some of the earlier writers upon Conchology.\* If we understand, then, "corpore tuberculato" in that light, the species, as it appears at first in the tenth edition, is manifestly the *squamosus* of Born; for the shell is there defined by a wholly harmonising synonymy, which is not opposed to the essentials of the diagnosis. Petiver's figure (correctly cited there as 3, not 4 as in the twelfth edition) is an excellent representation of that shell, and the language of Sloane applies most exactly to the same species: the remaining reference (Mus. Ad. Fr.) is merely to a name without figure or description appended. The additions in the twelfth edition are rather against this allocation; for although the "arcuato-striatæ" is very suggestive of the peculiarly characteristic arched grooves of its central areas, and raised tubercles ("harum 1 et 7 adpersæ tuberculis elevatis") are certainly present on its terminal valves, yet the special indication of the particular plates which are furnished with them insinuates their absence from the rest. It is not impossible, indeed, that the raised triangles, being peculiarly liable to abrasion, were worn smooth in the typical specimens, but this is purely conjectural, and, as our author did not possess

\* Spengler, in his Monograph of this genus (Skrift. Naturlhist. Selskab. vol. iv. pt. 1), cites the vignette 16 of the eighth volume of Chemnitz's 'Conchylien' (p. 252, f. A), which represents a seven-valved form of Wood's *fasciatus*.

the species, not possible for me to demonstrate. A fourth synonym, likewise, is produced in the twelfth edition, ('Seba, Mus.' 3, t. 1, f. 14), a wretched engraving, which neither agrees with the description nor approaches at all to the other references. The ligament\* is delineated as bestudded with small circles, probably meant for spine-cavities, or perhaps prickles. One could almost fancy that, through some carelessness in copying, the fresh synonyms of this and the succeeding species had been transposed, for both Edwards and Seba exhibit the *squamosus* of Born, a species which bears not the remotest likeness to the prickly margined *aculeatus*. Schröter, for his ideal of this species, has selected a seven-valved *Chiton* that reminds us a little of the *occidentalis* of Reeve: his figure (Einleit. Conch. vol. iii. pl. 9, f. 19), evidently taken from an eroded individual, exhibits scattered granules or small tubercles upon all the valves alike; there are no arched striæ delineated. Gmelin and his train of followers adopt this determination, to which I must demur.

### *Chiton aculeatus.*

He who would identify the *aculeatus* of Linnæus must place his sole reliance upon the description; for although three synonyms are appended, they throw no light upon the still ambiguous species. The worn example engraved in the 'Thesaurus' of Rumphius exhibits not a vestige of character: the figures of Edwards (B, not D as in the text) and Seba, on the contrary, present marked features, but such (scaly margins) as are opposed to the definition. Linnæus, in his published correspondence, acknowledges that he has erred in citing the former of the two for *aculeatus*: it is an admirable representation of the *squamosus* of Born, to which species the latter (Seba's figure), also, bears a decided resemblance. Murray's execrable engraving, in the "Amœnitates" (vol. viii. pl. 3, f. 1), so often quoted as an accredited delineation of the Linnean *aculeatus*, if not actually

\* In figure 15, which is stated by Seba to be the under side of the same shell, the apertures for tufts of bristles are plainly manifest, whilst the other markings are absent.

copied from that of Rumphius, is almost a *fac simile* of it: no ligamental spines are represented in either.

Two *Chitons* have been suggested as entitled to the Linnean name, — the *spiniferus* of Frembley (Zool. Journ.) and the *aculeatus Nicobaricus* of Chemnitz (Conch. Cab. vol. x. pl. 173, f. 1692): the claims of the former are supported by Reeve and one or two modern writers; of the latter by Spengler, Deshayes, and the majority of the older conchologists. Although it is not impossible that a worn specimen, as suggested, of the former shell was the source of the Linnean *aculeatus*, I cannot accede to the propriety of disturbing the name of a well-established species, without a more perfect correspondence of its features to the ascribed characteristics than is here obtained; for, independently of the unlikelihood of a Chilian shell having been known to our author (the recorded locality of whose species is “Asia”), its sculpture so far differs as to induce considerable doubt. The American shell is adorned with both radiating rows of granules and obliquely longitudinal sulci, a florid style of ornamentation scarcely compatible with the simplicity one might expect from “transverse per totum striatæ.” The required echination need not consist of long spines; the “corpore subaculeato,” as observed by Chemnitz, would rather imply mere prickles.

The only modern writer who has described the Chemnitzian *aculeatus* is Deshayes, whose description appears to have been derived from the details given in the ‘Conchylien Cabinet.’ In the exquisitely illustrated Monograph of this genus in the ‘Conchologia Iconica’ it is referred, somewhat strangely, to *spiniferus*: a perusal of the characters indicated by Chemnitz forbids such an appropriation. It is possible, indeed, that we no longer possess the species in England: of those published in the ‘Conchological Illustrations’ by Sowerby, his representation of a Philippine Island species (*spiniger*, f. 68) most nearly resembles the delineation of Chemnitz, whose statement that the surface was granose where not eroded, and that the ligamental prickles were of a whitish hue (but red in Spengler’s specimens), corresponds with the characteristics of that shell. If the identity of these two can be proved, the *C. aculeatus Nicobaricus* can scarcely be the transversely striated shell of the ‘Systema.’ Our author, in his own copy of the tenth edition



of the 'Systema,' has indicated his possession of the species, and in truth there still exists in his cabinet a worn specimen (probably the *piceus* of Wood and Sowerby), which displays the few specialties required by the original short definition. In the list appended to the twelfth edition the *aculeatus* is omitted; the example no longer answers to the enlarged description. Is it not desirable to wholly reject the Linnean *aculeatus* as a recognisable species?

### ***Chiton fascicularis.***

It is to be regretted that Linnæus did not possess this shell, since the brevity of his description renders it doubtful, in the absence of a synonymy (at that period there was no drawing of a tufted *Chiton* extant), to settle whether the name should be continued to that shell (Conch. Illust. f. 87), which is thus termed by almost all who have described it, or transferred to the larger allied species, the *crinitus* of Sowerby (Conch. Illust. f. 88). The locality, "Barbaria," favours the latter idea, yet it seems scarcely worth while, on such slender grounds, especially as both mollusks are found in the Mediterranean, to disturb an established recognition.

### ***Chiton squamosus.***

He who has carefully perused the elaborate description in the 'Museum Ulricæ,' and pondered on the "semistriata" of the diagnosis, will begin to marvel at the singular inapplicability of that term to the fully sculptured *Chiton* that usually bears this name (Born, pl. 1, f. 1; Wood, Gen. Conch. pl. 1, f. 1). He will naturally wonder, too, that three excellent synonyms (Sloane, Edwards, Petiver), well known to the author of the 'Systema,' should have been referred to other species. Spengler (whose opinion is adopted by Schumacher), in his valuable yet neglected Monograph of the genus *Chiton*, remarks on the incorrectness of the ordinary appropriation of this name, and proposes the epithet *undatus* for the Bornian *squamosus*. The

cabinet of Linnæus, who fortunately for us possessed this species, removes all doubt upon the subject. One shell, and one only, agrees with the diagnosis: it is the *fasciatus* of authors (Sow. Conch. Ill. f. 153), and corresponds accurately to the language of the "Museum," and to the figure published by Spengler (pl. 6, f. 2). The *squamosus* of authors is not present in the collection.

### ***Chiton punctatus.***

This name must assuredly be expunged from our catalogues. The three original references point out three species,—a Chinese, a Spanish, and an American one. The first of these, from which also the name was derived, is the *Chiton punctatum* of the 'Chinensia Lagerstömiana' (one of the "Amœnitates" thus cited in the tenth edition): the description runs as follows—"Corpus ovale, album, adpersum punctis excavatis. Testæ 8, transversim oblongæ, lateribus rugosæ, fuscæ, limbo fusco, absque angulis." Of the second we only learn from Osbeck's 'Dagbok Ostindisk Resa,' where it is called *C. læve*, referring perhaps to the ligament, that it was cymbiform, with its valves transversely sulcated. The 'Ephemerides Naturæ' presents us with a meagre description and a tolerable figure: from the two combined we may glean the following particulars:—Shell subcarinated, greenish, ash-coloured, and glaucous outside; brown within; lateral areas marked with isolated granules (of which also there seem traces in the engraving upon the central triangles, which are termed glabrous and appear eroded): terminal valves, one granose, the other worn smooth. Ligament scaly, with alternate lighter and darker bands. Length two inches.

None of these descriptions are at all suitable for a smooth shell with excavated dots upon its ligament. The reference to Seba, added only in the final edition, is equally incorrect. This ill-executed figure exhibits a smooth-looking variegated *Chiton* (not so very unlike *marmoratus* or *tulipa* of Reeve's Monograph) with a scaly margin. It is highly probable that the original type was an eroded shell, with its ligament apparently punctured, from being stripped of the spines or scales which once adorned it.

### **Chiton ruber.**

As our author owned but few *Chitons*, of which this was one, the recognition of it in his cabinet is very easy, since it is the only shell which can possibly agree with his description. The surface of the specimens, which belong to the species similarly named by almost all writers (Brit. Moll. pl. 59, f. 6), aptly coincides with the expression, "valvulis oblique subarcuato-striatis."

### **Chiton albus.**

By a similar process to that used for the last species, one may recognise the *Chiton albus* in the Linnean collection; it is the little *Chiton* thus named in Sowerby's 'Conchological Illustrations' (fig. 99). The specimens explain the expression, "valvula prima postice emarginata," that hinder edge (which is always more or less incurved in this genus) being more suddenly concave in the middle than is the case in the individuals of the next, and most closely allied, species in company with it. Strictly speaking, the surface is not smooth; but it requires a powerful glass to detect the very minute shagreening. "Acta Nidros. 3, t. 6, f. 4," (an irreconisable figure of a small Norwegian *Chiton*) is cited in the manuscript.

### **Chiton cinereus.**

With equal readiness, and by a like method, one may identify the typical examples of this species: they are assuredly the *marginatus* of British writers, (*C. cinereus*, Brit. Moll. pl. 58, f. 1). One of the two small individuals present in the collection ("vix cimice major") is "ovata;" the other strikingly displays the "seu postice paullo latior" of the description. "Forte prioris varietas" is written in the Linnean copy, and,

in truth, the distinctive characters are by no means conspicuous. The *cinereus* of the earlier British writers is not present.

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## L E P A S.

The very bad condition of the majority of the *Cirripedes* in the Linnean cabinet, and the absence of appended numerals to the specimens, prevent much aid being derived from an examination of the types.

### **Lepas balanus.**

The large Northern *Balanus*, so characteristically delineated by Born (Test. Mus. Vind. pl. 1, f. 4), as the Linnean species, answers so correctly to the various descriptions of its features in the different works of our author, who first separated it from the succeeding species, with which, in the tenth edition of his 'Systema,' he had confounded it, in his 'Fauna Suecica,' that it has been generally, and with reason, accepted as its representative by succeeding writers. It has, however, from the elevation of its specific epithet to a generic appellation, received many different names, among which may be mentioned *B. sulcatus* in Bruguière's monograph, and *B. Scoticus* in Wood's 'General Conchology.' The *Lepas balanus* of the last-named work (pl. 7, f. 3) is a very different species, which does not so well suit the "operculis acuminatis" of the 'Systema,' or the "operculum quatuor valvulis compositum, acumine longo claudatur oblique mucronato" of the 'Fauna Suecica.'

The synonymy is deplorably bad, but as no satisfactory representation of the species apparently designed was in existence, we could not expect a very correct one. Leuwenhoek's eighty-second epistle is concerning the human tongue; Gualtier's

cited figure belongs to *Coronula patula*, which suits not the expression "conica;" Klein's is a mere copy from that one in Lister's 'Historia,' which is referred by Linnæus himself to the succeeding species; Baster's, so far as regards the shell portion, is wholly irreconisable; &c., &c. A far better idea of the object intended was suggested by the single (erroneous) reference in the 'Fauna Suecica,' which, by the mental addition of the characters specified in that publication, would call up the image of *Balanus sulcatus*, a specimen of which (Wood, Gen. Conch. pl. 6, f. 3) is still preserved in the Linnean collection, and alone of those present answers precisely to the combined characteristics and locality.

### ***Lepas balanoides.***

This species was first published by our author in his 'Fauna Suecica' with the habitat "In lapidibus vulgatissima." The Swedish locality, by greatly limiting the number of *Lepades*, with which the most comprehensively brief diagnosis must be compared, materially assists us in arriving at a sound conclusion; the bathymetrical position of the *Cirriped*, "non supra refluxum, &c.," is of no less importance, since we are enabled to fix upon the common littoral *Balanus* of Sweden as the representative of the Linnean species. This I conceive to be identical with the *B. ovularis* of Gould's admirable work on the Invertebrata of Massachusetts (pl. 1, f. 7), which is the ordinary *L. balanoides* of British collectors—a littoral species with a membranous base, almost invariably confused in our cabinets with the calcareous-based *rugosus*: the latter is always found in deeper water, and so exactly resembles it externally as to render the mistake most pardonable. The "lævi" of the brief description seems adverse to the recognition, for most examples are rough: it has been changed, however, to "substriata" in the revised copy. I am assured by Darwin (the highest authority upon the *Cirripeds*) that the *ovularis* is not unfrequently smooth likewise. The synonymy throws but little light on the subject: Petiver merely gives us a list of names; Argenville's figure looks like *B. perforatus*, a Southern,

not a Swedish, species, and one, moreover, intended to have been named *ovatus* by Linnæus, as we learn from his handwriting attached to Ellis' drawing; Leuwenhoek's engraving is irreconisable; Lister's (at least in his *Anim. Angl.*) exhibits the ordinary aspect of *ovularis*. These two last might pass for *B. rugosus*, but that is never littoral. Hence, upon the whole, the claims of *ovularis* to be held the *L. balanoides* of Linnæus appear the best grounded.

It is not unworthy of remark that "cum priore" precedes "sed" in the original: the passage as printed reads somewhat obscure.

### *Lepas tintinnabulum.*

The figures referred to all exhibit the general aspect of the richly painted *Balanus*, usually designated by this epithet (Wood, *Gen. Conch.* pl. 6, f. 1, 2), but whether all may have been designed for the same species is perhaps to be doubted. The older representations of the *Cirripedes* rarely display those latent characteristics which modern research insists upon; the opercular valves were generally wanting in the examples depicted. There is no reason for doubting the correctness of the traditional recognition, although the European locality is not strictly a suitable one: living specimens, however, are abundantly found in almost every port, on the bottoms of merchantmen. It is probable, too, that our author confounded it with the *tulipa* of the Mediterranean, of which, as well as of *tintinnabulum* proper, there is an example in his collection. The details of the 'Museum Ulricæ' are very meagre; the transverse striæ of the interstitial areas, there spoken of, are frequently absent in mature individuals.

### *Lepas diadema.*

Gualtier, where cited, has delineated, and Boccon (293, not 294) described, the *Coronula diadema* of authors; Rumphius, on the contrary, has figured *Cor. balanaris*, but the description in the 'Mantissa,' and even the "subrotunda" of the 'Systema,'



manifest that the latter was not the species really intended. In our author's revised copy, the Mantissa is referred to ("544"), and likewise Lister's drawing of *C. diadema* ("t. 445"), of which a worn individual (Wood, Gen. Conch. pl. 4) is still preserved in the collection of Linnæus. "Act. Angl. 1785, 2, t. 34, f. 7," is added in the same manuscript.

### ***Lepas testudinaria.***

With the exception of the figure in Petiver's Amboyna shells, which represents *Coronula balænaris*, and figure 13 of Ellis in the 'Philosophical Transactions,' (Act. Angl.), which is generally quoted for *C. patula*, all the cited engravings are usually ascribed to the *C. testudinaria* of authors (Chemn. Conch. Cab. pl. 99, f. 847, 848), which answers to the brief description in the 'Systema,' and may consequently be regarded as the representative of the Linnean species. For not merely are the *C. patula* and *C. balænaris* each represented by a single figure only, but the excavation of the interstitial areas is much less marked than in the traditional *testudinaria*: moreover, the engraving of the former was only added in the twelfth edition; and the drawing of the latter, which is not found on tortoises, is a mere copy from plate 14, fig. H, of Rumphius, referred by Linnæus himself (though erroneously) to the preceding species. The "Apertura clausa valvulis sex," of the 'Museum Ulricæ,' where the details otherwise correspond, and the synonymy is correct, save that the M of Gualtier is misprinted "5," suits no member of the genus.

### ***Lepas mitella.***

There is no reason to doubt the identity of this species with the *Pollicipes mitella* (as defined by Darwin), for although the synonymy comprehends some figures of *P. cornucopia* (Argenville, and Ellis, 'Acta Anglicæ,' 1758, pl. 34 — not 23, as in M. U.—f. 4), that Cirripede suits not the "difformiter striata" of the diagnosis. The majority of cited figures (Seba, Rumphius, Klein, Petiver) exhibit the *P. mitella*, which agrees with

the description of this *Lepas* in the 'Museum Ulricæ.' Lang furnishes a name only without figure or description appended.

The *P. cornucopia* is set apart in the Linnean cabinet as an intended new species.

### ***Lepas scalpellum.***

Gualtier, where cited, has very rudely represented the *Scalpellum vulgare* of Darwin's admirable Monograph of the *Cirripedia*; Ellis more exactly the *Pollicipes cornucopia* of authors. The latter synonym has not misled naturalists, since the "tredecim valvi" of the description virtually excluded it. This erroneous reference, which is found likewise in the 'Fauna Suecica,' where, indeed, the species first appeared, is corrected in the revised copy of the 'Systema,' by the change of the 4 into 2: the name *scalpellum*, too, in the handwriting of Linnæus, is properly attached to the latter figure, on a loose engraving (Act. Angl. vol. 50, 1758, pt. 2, pl. 34) that formed part of his library.

There is no reason, then, for discrediting the soundness of the accepted recognition (Darw. Mon. Cirri. vol. i. pl. 5, f. 15). Thirteen valves have usually been assigned to the species: it appears, however, that an additional minute rudimentary one may be detected on a careful examination.

Our author has not recorded his own possession of a specimen.

### ***Lepas anserifera.***

Our author has informed us, that this briefly characterized *Cirripede* looks precisely like the succeeding one, (which is the type of the *Lepas* proper), except in size and sculpture. Hence, as six species only are contained in the purified genus *Lepas* (*Anatifa* of the Lamarckian System), our labour of comparison is not a very toilsome one.

It is not possible for the *Lepas anserifera* of modern authors, whose sculpture consists of incised striæ, to be the species so named by Linnæus. The raised sulci ("sulci elevati") form

a remarkable feature, and one that is solely to be found in *L. pectinata* (Wood, Gen. Conch. pl. 12, f. 1, as *sulcata*), which must consequently have been the species originally intended.

This conclusion had been arrived at by Poli, who appears to have conscientiously studied the text of the 'Systema.' The circumstance that Linnæus had referred Lister's characteristic figure (Conch. t. 440, f. 283) of the spurious *anserifera* to *anatifera* was sufficient to rouse suspicion: very few writers, however, have critically analysed the synonymy of our author.

### *Lepas anatifera.*

So minute, however essential, are the differences between those closely allied *Lepades*, the *anatifera*, *Hillii*, and *Australis* of Darwin's Monograph, that to boldly pronounce to which of the three each of the synonyms appended to this *barnacle* should be attributed would be sheer presumption: the rudeness of the figures and inadequacy of the descriptions afford too wide a field for conjecture. The two former, indeed, were certainly confused in both the cabinet of Linnæus (where they solely answer to the definition) and in his references; at least, I take Ellis, (not "Hil." as misprinted), fig. 6, and Seba, fig. 2, by the distance of the carina from the scutum, for *L. Hillii*, whilst many of the other drawings bear a stronger likeness to *L. anatifera*. Under such circumstances, where no veritable discriminative features are indicated by an author, it is ever expedient that the dictum of that writer who has first appreciated the essential distinctions should be followed: moreover, the expression "acutis," applied to the scuta in the 'Museum Ulricæ,' is not so strictly applicable to *Hillii* as to its congener. Hence the *Lepas anatifera* of Darwin (Mon. Cirr. vol. i. pl. 1, f. 1) seems best entitled to the Linnean appellation.

In the revised copy, the reference to Lister's 'Historia' is changed from "440" (generally quoted for *anserifera*) to "439, f. 282," the var. *dentata* of *anatifera*.

The references in the 'Museum Ulricæ' actually include a *Scalpellum* (Arg. pl. 30, f. G, and Gualt. pl. 106, f. C)! well

might the younger Linné, after the synonymy in his own copy of the 'Systema,' write "Forte in plures species dividendæ, saltem varietates formâ et colore diversissimæ."

### **Lepas aurita.**

As Darwin has observed, there is no reason to doubt the identity of this *Cirripede* with his *Conchoderma aurita*, although the expression "octovalvi" is most inaccurate. All the authors cited exhibit an *Otion* (*Conchoderma*), and apparently that species. Linnæus did not possess it, and has added nothing to his published account.

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## **P H O L A S.**

In the generic description, our author had proposed to substitute "margo posticus recurvatus" for "cardo recurvatus."

### **Pholas dactylus.**

*Pholas dactylus* of authors (Wood, Gen. Conch. pl. 13, f. 1, 2, 3) confirms by its presence the established identification, and alone agrees with the mass of synonyms. Seba, as usual, is wrongly quoted: his figure represents *crispata*. In quoting Argenville, the letter M, not K, should have been referred to.

### **Pholas costatus.**

The established identification of this fine looking *Pholas* (*P. costatus*, Sow. Thesaur. Conch. vol. ii. pl. 102, f. 8, 9) is corroborated by a manuscript reference to "List. t. 434" in

our author's own copy of his 'Systema.' Although the printed locality was erroneous, for the shell, which was not in the possession of Linnæus, is a native of America, not of Southern Europe, the species was easily determined, and at an early period, by the aid of Gualtier, whose figure is sufficiently characteristic.

### ***Pholas striatus.***

Linnæus has not signified his possession of this species: there is a chip-box, however, in his cabinet, which contains it, but its authenticity is disproved by the writing upon it. The indicated locality is erroneous; the mollusk being a wood-piercer, and not known to be indigenous to Europe, although found there in ship-timber. The engraving of Gualtier was the basis for the established identification (*P. striatus*, Sow. Thesaur. Conch. vol. ii. pl. 104, f. 40, 41, 42, and pl. 105, f. 43, 44).

### ***Pholas candidus.***

The *Pholas candidus* of most writers (Wood, Gen. Conch. pl. 14, f. 3, 4) still rests in its named receptacle in our author's cabinet. The correct identification of the species appears to have arisen chiefly from the cited figure in Lister's 'Cochlearum Angliæ'; for Bonanni, pt. 2, f. 24, is a *Pinna*: the reference should have been to fig. 36. There is a specimen of *P. orientalis* in the collection, that has been marked by some one with the cyphers 13 (indicative of this species) in the tenth edition, but that this is an error is demonstrated by the "undique striis decussatis muricata" of the diagnosis.

### ***Pholas pusillus.***

As usually occurs, when our author did not himself possess the species he had described, no additional information is to be obtained from the inspection of his manuscripts. From the combined figure and description, neither of which can be termed

good, the shell has usually been regarded as a variety of *striatus*. The expression “*arcuato-striatæ*,” however, reminds one of the following remark, in Sowerby’s ‘Thesaurus,’ upon the little *P. cuneiformis* of Say: “Resembling *striata*, but with the striæ or ribs of the anterior part curved, not angular.” The *P. pusillus* might perhaps be referred, with a note of interrogation, to that American species.

### ***Pholas crispatus.***

The *Pholas crispatus* of authors (Wood, Gen. Conch. pl. 15, f. 3, 4, 5) still remains, in our author’s cabinet, in its marked receptacle, and alone of the *Pholades* present displays the required characteristics. The details of the ‘Museum Ulricæ’ and the cited figure in Lister (Angl. pl. 5, f. 38) rendered the determination of the species an easy task: the additional references in the manuscript to “Pet. Gaz. t. 79, f. 13,” and “List. t. 436,” confirm the identification. The following note is from the pen of Linnæus: — “Habet dentem vacuum porrectum ut *Mya*, sed margo posticus recurvatus ut *Pholas*. Striæ testarum hinc scabræ, inde læves. Differt a reliquis dente intus recurvato vacuo. Testa multum hians connectit cum sequente.”

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### M Y A.

To his generic definition our author had intended to add “margo longitudinaliter elevatus,” in contradistinction to the “margo recurvatus” of the preceding genus, and had formed a new genus, UNEDO, for the fresh-water species *pictorum* and *margaritiferus*.

### ***Mya truncata.***

An example of the *Mya truncata* of authors (Wood, Gen. Conch. pl. 17, f. 3) is marked for this species in our author's cabinet, and confirmatory references to "Pet. Gaz. t. 79, f. 12" and "List. t. 428" are added in his manuscript.

### ***Mya arenaria.***

The *Mya arenaria* of authors (Wood, Gen. Conch. pl. 17, f. 3) is marked for this species in the cabinet of Linnæus, who, in his own copy of the 'Systema,' after the word "excavat," has written "compressa explodit aquam," and substituted "adnato" for "parallelo."

### ***Mya pictorum.***

Of the two illustrative figures, that of Lister decidedly represents the *Unio pictorum*: Bonanni's drawing is more doubtful, and was possibly meant for *U. tumidus*. The descriptions in both the 'Fauna Suecica' and the 'Systema' are brief and unsatisfactory, and might suit either species alike.

More *Uniones* than one are present in the collection, but upon the whole the *Unio pictorum* of authors (Rossmäsl. Iconog. Land und Süssw. Moll. f. 196) agrees best with the synonymy and description. Upon a specimen of it there is written "List. (Ang.) t. 2, f. 30," and in the manuscript "List. t. 147, f. 3" is likewise referred to. Both of these references favour the established identification. Our author has remarked, in his copy of the 'Systema,' "Solo cardine differt a *Mytilo anatum*."

### ***Mya margaritifera.***

The *Unio margariferus* of authors (Turton, Dithyra Britan. pl. 16, f. 1) is still present in the Linnean collection, and alone

answers to the account of this species, which, having been described at length in the 'Fauna Suecica,' and fairly enough delineated in both the 'Historia' of Lister and the 'Tentamen Methodi' of Klein, has been recognised with facility by conchological writers.

### ***Mya perna.***

Our author intended (had life been spared him) to have removed the above shell from *Mya*, and to have placed it along with his *Mytilus bidens* and *ungulatus* in a proposed new genus *Perna*, the equivalent to the restricted *Mytilus* of Lamarck. The *Mytilus perna* of authors (Schröt. Einleit. Conch. vol. ii. pl. 7, f. 4) is marked for this species in the Linnean collection, and answers admirably the requirements of the description. The reference to Argenville is correct.

### ***Mya vulsella.***

Our author did not possess this comparatively scarce shell. The 'Museum Ulricæ' enables us to recognise it in the *Vulsella lingulata* of Lamarck (Sowerby, Genera Shells, Vuls. upper figs.).

### ***Mya arctica.***

The *Hiatella (Saxicava) arctica* of modern writers (Turton, Dithyra Brit., pl. 2, f. 12) is still preserved in the Linnean cabinet, and alone of its contents agrees with the excellent description in the 'Systema.' Our author meditated the removal of the species to *Solen*, and in his manuscript had written "subdentulo" in place of "edentulo."

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## SOLEN.

**Solen vagina.**

Of the four synonyms of this shell, three (Rumphius, Argenville, Klein) refer to an Indian, one only (Gualtier) to an European shell; yet authors have seemed obstinately bent upon reserving the name for the latter, in despite of the language of the 'Museum Ulricæ,' "Extremitas postica crassior, oblique extrorsum truncata, antice vero rotundata." This passage, so inapplicable to the *Solen vagina* of British writers, which indeed is not present in the Linnean collection, perfectly accords with the characters of *Solen brevis*, of which an example (Mawe, Conchol., pl. 5, f. 2) is preserved in the cabinet, and alone of the shells there present suits both the description and synonymy. Hence there can be no reasonable doubt that it was the type of the species.

**Solen siliqua.**

The *Solen siliqua* of authors (Wood, Gen. Conch. pl. 26, f. 1) is marked for this species in the Linnean cabinet: the manuscript adds "List. t. 409" to the former synonymy.

Of the published synonyms, the figures in Ginanni and Argenville are very bad; of Lister, admirable; of Gualtier, Bonanni, and Plancus recognisable.

**Solen ensis.**

The *Solen ensis* of authors (Wood, Gen. Conch. pl. 28, f. 1, 2) is still preserved in the Linnean collection, and alone of the species there present agrees with both description and figures. The reference to Lister's work on English shells greatly facilitated its former identification; the delineation, though not good,

being sufficiently characteristic: it is apparently the same engraving as that in his 'Historia,' which is thus cited, "List. t. 411," in the manuscript of our author. Argenville probably intended to delineate the large Southern form: his engraving is very bad, but intelligible.

### **Solen legumen.**

*Solen (Ceratisolen) legumen* of authors (Wood, Gen. Conch. pl. 28, f. 4, 5) has long been recognised for this species, thanks to the figures in Gualtier and Plancus, and the correctness of the recorded locality. The reference to Adanson (only added in the twelfth edition) is an error.

In the revised copy of the 'Systema,' where our author has written "Costa rudimentaris in medio testæ, nec ad anum propinq(ua) ut in 38 (*radiatus*)," the additional synonym of "List. t. 420" supports the received opinion.

### **Solen cultellus.**

Linnaeus did not possess this species, which, through the excellent description in the 'Museum Ulricæ' and the quoted figures, has been satisfactorily identified as the *Solen cultellus* of authors (Crouch, Introd. Conch. pl. 2, f. 14).

### **Solen radiatus.**

Many individuals of this pretty shell (*Solen radiatus*, Wood, Gen. Conch. pl. 31, f. 1, 2) are still preserved in the Linnean cabinet, and alone of those present exhibit the required characteristics of the species. "List. t. 422" and "nymphæ intrusæ" are added in the manuscript.

### **Solen strigilatus.**

The *Solecurtus strigilatus* (Reeve, Conch. Systemat. pl. 26, f. 4) of the Mediterranean Sea is present in the oft-referred-to collection, and alone answers to the combined requirements of the description and original synonymy (Gualtier and Bonanni). The variety *a* of the 'Museum Ulricæ' is a distinct species. Adanson's figure represents a shell that differs not a little from the ordinary form, although it would undoubtedly have been included in *strigilatus* by our author. No variety or allied species, however, is present in his cabinet.

### **Solen anatinus.**

Linnæus did not possess this shell, which, from the description in the 'Museum Ulricæ' and the cited illustration, is always referred to the *Anatina subrostrata* (Chemn. Conch. vol. vi. pl. 6. f. 46 to 48) of Lamarck. The figure of Rumphius is very rude: although certainly representing a member of the genus *Anatina*, it does not exhibit the basal outline of the recognised species, yet cannot be referred in preference to any other known shell.

### **Solen bullatus.**

Unfortunately our author neither possessed this shell, nor has added anything in manuscript to his former account of it. Although it has been generally identified as the *Cardium bullatum* (Wood, Gen. Conch. pl. 56, f. 3) I would suggest the expediency of subjoining a note of interrogation in future citations, since, independently of the very brief description being equally suitable for *C. apertum* and others, the figure of Rumphius being apparently an *Arca*, and the expressions "subrotunda" and "substriata" being inappropriate, the delineations of *Cardium bullatum* in the works of Gualtier and Lister, books habitually consulted by Linnæus for illustrative

figures, were virtually rejected by their omission. Schumacher, a very careful and independent observer of the species described by Linnæus, remarks (p. 159) that it was not likely that our author would have placed a clearly hinged *Cardium* in the genus *Solen*.

### ***Solen minutus.***

Linnæus, in his own copy of the 'Systema,' has wisely expunged this *Saxicava* from the list of species, with the remark "Idem cum *Mya Arctica*," which latter he proposed to transfer to this genus.

### ***Solen virens.***

One shell alone (pl. 1, f. 1) in the entire Linnean collection precisely corresponds to the published description of this species, and, as our author has expressly declared his possession of an example, no reasonable doubt can be entertained of the typical authority of the specimen. It is the *Glaucanome virens* of Reeve (Conch. Icon. Glauc. f. 9), whose attention I directed to my identification.

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## **T E L L I N A.**

Many of the *Tellens* in the Linnean cabinet have been ejected from their original boxes, and placed in pasteboard trays, on which the names are written. Although the types have been so carefully distinguished that where no cyphers were found "ex descriptione" has been added; the writing, not being the original one, diminishes the authority of the specimens.

### ***Tellina Gargadia.***

Our author did not himself possess this species, which, from the description in the ‘Museum Ulricæ,’ has been universally recognised (*Tellina Gargadia*, Hanley in Sow. Thesaur. Conch. vol. i. pl. 62, f. 181). The erroneous references correct themselves, there being no N in plate 43 of Rumphius (it should have been 42, *Remies Gargadica*), whilst fig. 55 (a mere copy from the last) is only present in plate 10 of Klein’s bivalves.

### ***Tellina lingua=felis.***

The *Tellina lingua-felis* (Hanley in Sow. Thesaur. Conch. vol. i. pl. 64, f. 236) still remains in the Linnean cabinet, and alone agrees with the description in the ‘Museum Ulricæ.’ The name was taken from Rumphius, whose figure is copied by Klein. Gualtier’s delineation (pl. 76, f. B) is scarcely correct, if intended for this species.

### ***Tellina virgata.***

An example of the *Tellina virgata* (Sow. Thesaur. Conch. vol. i. pl. 63, f. 204) is marked for this species in the Linnean collection. The erroneous reference to Argenville is expunged in the revised copy of the ‘Systema.’

### ***Tellina angulata.***

Had Chemnitz carefully studied the description in the ‘Systema,’ he would scarcely have selected a smooth species of *Tellen* for his *T. angulata*. He has, however, been followed by most writers (Schröter, Wood, Dillwyn, &c.), who have alike disregarded the expressions “Affinis *T. virgatæ*” and “striis transversis recurvatis.” The meaning of the last term is thus

explained in the 'Fundamenta Testaceologiæ' of Murray, the pupil and standard interpreter of the conchological phraseology of Linnæus: *Recurvatæ* elevatæ, membranacæ, margine versus nates spectante." In further elucidation of his meaning, this very species (47 of the 'Systema') is mentioned by him. Born, in his attempted identification, has avoided the error as to surface, but has not pondered sufficiently over the expressions "Affinis *T. virgatæ* sed minus oblonga, alba, immaculata, nec radiata,"—"Anus ovalis, nec solis marginibus inflexis." Spengler, with more probability, has suggested the *T. polygona* (Chemn. Conch. Cab. vol. vi. fig. 77) as its representative.

Our author in his lists has indicated his possession of this species, and there still remains in his collection a lyrated shell (*Tellina plicata*, Encyclop. Méth. Vers. pl. 287, f. 3), which agrees in every particular (the hinge excepted) with the requirements of the description. The lateral teeth, denied to it in the diagnosis, are so small that they might easily have been overlooked: still the recognition is not perfect; hence the *T. angulata* can only be referred to that rare shell with a note of interrogation appended.

### *Tellina gari.*

Although both name and locality were taken from Rumphius, yet his shell, being smooth, by no means answers to the "striis transversis recurvatis" of the description. In this respect the figure of Argenville is likewise defective. Both engravings, however, are useful, from indicating the general aspect of the veritable *gari*; the former represents *Psammobia serotina*, the latter *Ps. vespertina*. From the outline of these figures, and the elaborate description of its dentition in the 'Museum Ulricæ,' little doubt can be entertained that this long sought-for species was either a *Psammobia* or a *Sanguinolaria*. The following passage in the 'Museum Ulricæ,' where full details of the specific characters are given, may refer perchance to those radiating striæ of *P. Ferroensis* which form rhomboids on the hinder lateral areas with the ordinary concentric ones: "Striæ transversæ retrorsum subimbricatæ; inter has strias aliæ striæ

anomalæ, in medio laterum, distantes, secant oblique ad angulum acutum strias ordinarias confertiores, quæ, nota huic specialis." The whole description in the 'Museum' so fairly applies to that common species (so abundant and diffused that it would have been strange, indeed, if Linnæus had not known it) that the *T. gari* may be referred to it with a double note of interrogation. The presence of that shell (Brit. Moll. pl. 19, f. 3) in the Linnean cabinet is devoid of authority, since our author has not enumerated the *T. gari* among the types in his own possession. If the passage just copied does not require that the anomalous striæ should be present together with the concentric ones, so as literally to traverse them, but only means that they run obliquely on one side of the shell, then in all probability several species were reckoned as varieties in the work referred to; *e. g.* the var.  $\gamma$ . might be *P. maculosa*.

Many shells have been looked upon, by various writers, as the representatives of this ambiguous species. Born, guided by Argenville's figure, selected a nearly smooth shell (*Ps. vespertina* or a very close ally); Chemnitz two, *Ps. cærulescens* and *Ps. pulchella*, to the former of which it is doubtfully referred by Lamarek, to the latter decidedly by Wood and Dillwyn. The "antice valde rugosa" is sufficient to exclude all the three; the recorded peculiarity of sculpture is utterly unlike that of *vespertina*. By the last-mentioned writers *Ps. maculosa* (or at least the figure 94 in Chemnitz, which much resembles it) is included in it likewise, and, if we are to understand by "in medio laterum," in medio testæ, that shell certainly approaches it more nearly than any other at present known to me. If, on the contrary, we hold that expression equivalent to in medio areæ laterum (*i. e.* the lateral area), then some such species as *Ferroensis* has a better claim to the Linnean appellation: Schröter, indeed, has figured that species for *T. gari*, but his description is extracted from the 'Museum Ulricæ.'

### **Tellina fragilis.**

The *Diodonta fragilis* (Chemn. Conch. Cab. vol. vi. pl. 9, f. 84) of the 'British Mollusca' is marked for this species in the Linnean cabinet.

## **Tellina albida.**

Our author has neither signified his possession of this doubtful species, nor added anything to his published account. Dillwyn, who derived his information from the MSS. of Solander (whose synonyms correspond to those in the copy of the 'Systema' that belonged to the younger Linnæus), surmises that the *Psammobia vespertina* was the species intended. The "sutura ante et post cardinem notata lineis transversis rufis" forbids this determination; neither, indeed, can I find that peculiarity present in any of the shells devoid of lateral teeth, yet furnished with prominent nymphæ (as this is expressly stated to be), save in *Psam. Tellinella*, a close ally of *vespertina*, of which at that period there was no figure in existence, and in *Sanguinolaria occidentis*. The former, although it so exactly corresponds to the description and locality in the 'Systema' that I scarcely doubt its identity, is most assuredly not the large species of the 'Museum Ulricæ' said to be "magnitudine ovi:" the true locality of the latter is not merely contrary to that stated, but the "cardo utrinque ex dentibus tribus" (M. U.) forbids even the generic allocation.

No author appears to have yet succeeded in recognising, even to his own satisfaction, the species in question (one might have believed there had been two, had not the tenth edition of the 'Systema' referred to the unpublished 'Museum'); neither, indeed, have I, but the type still preserved in Sweden may solve the problem hereafter.

## **Tellina foliacea.**

Our author did not possess this species, which has long been identified (*Tellina foliacea*, Hanley in Sow. Thesaur. Conch. vol. i. pl. 64, f. 253) through the cited figures and the ample details of the 'Museum Ulricæ.'



## ***Tellina planata.***

Both the references prove to be delineations of the white variety of *T. radiata*, an oblong shell which does not at all coincide with the diagnosis. Chemnitz, led by these figures, queried that shell for it: Spengler, without cause, imagined that it was the snow-white *hyalina* of Chemnitz (vol. vi. f. 99): Schröter contented himself with copying the Linnean description. Born's idea of the Linnean species has been generally adopted (by Solander amongst others), and with reason, since his shell agrees most fairly with the characters mentioned in the 'Museum Ulricæ.' This view is supported by an examination of the typical collection, for among the marked specimens we find that species (Born, Test. Cæs. pl. 2, f. 9). By some error the indicative numerals are those of the next species, but as that is likewise inscribed, and correctly so, and as both thus agree with their respective descriptions, there can be no doubt that the final cypher was a mere mistake. I may remark, too, that no shell in the Linnean cabinet will better answer to the details given in the 'Museum Ulricæ.'

## ***Tellina lœvigata.***

A rather young colourless example (like Sow. Thes. vol. i. pl. 64, f. 227, without the red margin) of the *Tellina lœvigata* of authors is marked for this species in the Linnean cabinet, where the rayed variety (Schröter, Einleit. Conch. vol. ii. pl. 7, f. 10) is likewise present. The quoted figure of Rumphius gives a better idea of its general aspect than any drawing at that time published, but was evidently designed for the *T. chloroleuca* of Lamarck, to which, however, the expressions "magnitudine ovi vel major, crassa" (M. U.) and "pube striato-scabra" are not so correctly applicable. The localities are erroneous, the species being really West Indian.

### *Tellina radiata.*

The *Tellina radiata* (Sowerby, Genera Shells, Tel. fig. 3) of authors is marked for this species in the cabinet of Linnæus: "List. t. 493.—Gualt. t. 89, f. I.—Arg. t. 25, f. A." are added to the references in his manuscript, where the correct locality "Jamaica" is also noted. Of these figures the last had erroneously been quoted by him for *T. virgata*. The European locality is a mistake, and arose either from his confounding a Swedish species ('Fauna Suecica,' No. 2132) with it, or perchance from specimens, the spoils of some wrecked merchantman, having been discovered upon the beach after a violent tempest.

### *Tellina rostrata.*

The well-known *Tellina Spengleri* (Chemn. Conch. Cab. vol. vi. pl. 10, f. 89) is marked for this species in the collection at Soho Square, and "List. t. 398" correctly referred to in the revised copy of the 'Systema,' where "Anguli et ani et vulvæ denticulata" is also added. This agrees with the language in the 'Museum Ulricæ,' "ano rimaque subserrata" (words quoted as in the tenth edition of the 'Systema,' where, however, they are not to be found), "striis transversis retrorsum subimbricatis—anus utrinque a testa distinctus angulo denticulato seu subserrato." Schumacher has taken this view of the species; yet those writers are scarcely to be blamed who, regarding the three figures cited in the 'Systema' (although actually, I doubt not, only referred to for the shape, the veritable *rostrata* not having been delineated at that period) as indicative of the species intended, especially as they were not repugnant to the original diagnosis of the tenth edition, in which "angulis subdentatis" was not inserted, have bestowed the name on the *T. vulsellæ* of Chemnitz (Sow. Thes. Conch. vol. i. pl. 61, f. 163). In my Monograph of *Tellina* I considered that the amended twelfth edition was the correct standard for the Linnean species.

### *Tellina inæquivalvis.*

As our author has stated his possession of this species, and one shell alone (pl. 1, f. 6) in the entire collection agrees with the description, no reasonable doubt can be entertained of the typical authority of that specimen which I consider to be a produced form of the *Pandora rostrata* of Lamarck. The species queried by Gronovius for this shell is the *Anomia tabacea* of his plates, an aged *Pandora*, the young of which subsequently received the name of *trilineata* from that Montagu of America, the illustrious Say.

### *Tellina trifasciata.*

By a similar mode of analytical examination one is enabled to identify this pretty species (pl. 1, f. 5), which I take for the *Donax vittata* of Lamarck as delineated in Delessert's folio (Rec. Coq. pl. 6, f. 12). The tray which contains it is also thus named in the collection (the inscription was probably copied from that in the original tin box when the specimen was removed), but the writing itself is modern, and hence of little authority. The same reference to Lister is appended to both this (not so in the tenth edition) and the next species, and with equal incorrectness, for *Psam. Ferroensis*, the shell represented by him, does not agree with either. On reference to the 'Fauna Suecica' we shall find a mere repetition of the original diagnosis in the tenth edition. The stated locality is erroneous.

### *Tellina incarnata.*

The *Tellina squalida* of Montagu (*T. depressa*, Wood, Gen. Conch. pl. 45, f. 3) is marked in the collection for this shell, and well agrees with the description of it. The cited figure of Gualtier is very rude, yet not so unlike the species. The *T.*

*incarnata* of the 'Fauna Suecica' (published subsequently to that of the 'Systema') is, says Loven, the *Psammobia Ferroensis* of the 'Animaux sans Vertébres.'

### ***Tellina Donacina.***

In the tin box thus marked in the Linnean cabinet there still repose specimens of the *Tellina Donacina* (Turt. Dithyra Brit. pl. 8, f. 4) of authors, one of them indeed adorned with the peculiar colouring recorded in the description. Despite of the erroneous reference to Gualtier, who has figured a real *Donax*, the species has long been determined by naturalists.

### ***Tellina truncata.***

As our author possessed this species, and only one shell in the entire collection (Chemn. Conch. Cab. vol. vi. pl. 10, f. 92), the *Psammobia pulchella* of Lamarck, displays the very peculiar division of surface alluded to in the description, there is every probability that it was the actual type of the species. The similarity to *T. incarnata* alluded to is evidently to the species of the 'Fauna Suecica,' not to the Mediterranean one. Strictly speaking it is not an elevated line, but an elevation of surface, which distinguishes the anterior from the posterior portion.

### ***Tellina balaustina.***

The typical collection confirms the established identification, inasmuch as no other shell than the *Tellina balaustina* of authors (Hanley in Sow. Thes. Conch. vol. i. pl. 56, f. 10) will accurately agree with the description. The locality is here correct, the authority for it (Fagræus) being specified.

### *Tellina remies.*

The circumstance of the name *remies* having been derived from the appellation bestowed by Rumphius in his 'Thesaurus' upon this orbicular *Tellen*, corrects the erroneous reference by our author to plate 43 (instead of 42), a mistake which he has himself rectified in his own revised copy of the 'Systema.' That figure and the language of the 'Museum Ulricæ' leave no doubt of the identity of the species with the *Tellina remies* of Chemnitz (vol. vi. pl. 12, f. 113) and of most authors (not of Born), an example of which is still preserved in the box so marked in the Linnean cabinet. Gualtier's extremely rude engraving, being irreconisable, cannot be quoted for this or any other shell: it exhibits, however, the shape and coarse concentric wrinkles of the species.

### *Tellina reticulata.*

The cited figure of Rumphius (pl. 42, not 43) represents a most coarsely decussated shell (which reminds one a little of the *Lucina exasperata* of Reeve), and does not at all coincide in sculpture with the delicate reticulation particularised in the description. As our author has not declared his possession of the species, no importance can be attached to the presence in his collection of the West Indian *Amphidesma reticulatum* (Crouch, Lam. Conch. pl. 4, f. 9), a shell supposed to be the representative of this species by Chemnitz (Conch. Cab. vol. vi. pl. 12, f. 118), Spengler, Schröter, Wood, &c. Yet assuredly that shell coincides so very fairly with the indicated characteristics that the Linnean *Tellen* may be referred to it with a note of interrogation attached. The authenticated locality, "Habitat in India, *Tesdorff*," and the expression "lynceo tantum videndis," applied to the concentric lyræ, as well as to the minute radiating striæ, forbid a more positive determination.

## *Tellina scobinata.*

The *Tellina scobinata* (Sowerby, Genera Shells, Tell. f. 2) of authors still remains in the typical collection, and alone agrees with the description of this species. "List. t. 302, f. 143" is correctly cited in the copy of the younger Linné.

## *Tellina lactea.*

Dr. Philippi, who has bestowed much pains upon the determination of the Mediterranean Testacea mentioned by Linnæus, remarking that the term "gibba" was peculiarly inapplicable to the *Lucina lactea* of authors, has transferred the name to that tiny bivalve which he had previously called *Luc. fragilis*. He has overlooked, however, the "semine Lupini albi major," a standard of size which demands that the Linnean species should decidedly exceed the magnitude of *T. balaustina* and *carnaria*, which latter are expressly declared to be as large as the seed of a white Lupine. Our author, too, who has noticed the absence of teeth in his *Venus edentula*, would scarcely have omitted to remark the same peculiarity in Philippi's *fragilis*. An examination of his cabinet has shown what Linnæus, who must have supposed that the Mediterranean specimens were the young of the larger shell, really intended to indicate. In one of its drawers there may still be discerned a small example of the *Lucina globosa* (Chemn. Conch. Cab. vol. vii. f. 430, 431), which alone accurately corresponds to the Linnean description, is not unlike the very rude quoted figure of Gualtier (intended, however, for the *Luc. leucoma*), and is, moreover, partly marked. The cypher 5 still remains, and as the definition of no other species in either edition of the 'Systema' which contains a 5 among the numerals that indicate its position (except perchance that of *Venus incrustata*, Number 115 of the tenth issue, whose hinge, however, answers not to the requirements of the 'Museum Ulricæ'), will at all correspond to the characters of this type, save Number 50 of the tenth and 65 of the twelfth

edition, both of which are *T. lactea*, we can scarcely doubt its having been the described type of the species in question. Nevertheless the *L. globosa* may justly retain its specific appellation, since the Linnean type was so imperfectly defined that there existed no possibility of detecting it without actual examination of the original example.

### *Tellina carnaria.*

The accuracy of the established identification is confirmed by an examination of the Linnean cabinet, where no other shell than the *Tellina carnaria* of authors (Donov. Brit. Shells, vol. ii. pl 47) will suit the description of this species: fortunately, indeed, no closely allied congener is there present.

The synonyms are incorrect: Lister has figured *Tellina solidula*; Gualtier's rude drawing is more like *Tellina tenuis*; neither of these displays the peculiarities of sculpture demanded by the diagnosis.

### *Tellina bimaculata.*

The *Tellina bimaculata* (Sow. Thes. vol. i. pl. 56, f. 20) of authors still reposes in its marked receptacle in the Linnean cabinet, and alone is furnished with such characters as are demanded by the definition. The locality attributed to it is in all probability erroneous, though scarcely a Fauna of any part of Europe has been published without this species being included among the marine productions. It is a native of the Antilles, most of the *Testacea* of which islands have been assigned to Europe by the immortal Swede.

### *Tellina Balthica.*

The original type (*T. Balthica*, Sow. Thesaur. Conch. vol. i. pl. 59, f. 121) still remains in its own marked box in the Linnean cabinet, and accurately answers to the features of its description in both the 'Systema' and the 'Fauna Suecica.'

### *Tellina pisiformis.*

This common West Indian shell has long been recognised, the original description having proved sufficiently ample for the purpose. The specific name was probably derived from the expression "pisiformis," used by Gualtier in the text that accompanies his coarse yet artistical engravings. The reference to his drawing (t. 7, f. C, as in the tenth edition, not G, as by a typographical blunder it appears in the twelfth) was, nevertheless, incorrect, for the *Cyclas* he has so rudely delineated is devoid of nearly every one of the required characteristics. It must be recollected, however, that no figure of the species intended was then extant. There are specimens (*Tellina pisiformis*, Hanley in Sow. Thesaur. Conch. pl. 56, f. 30) in the Linnean collection, which answer accurately, and alone do so, to the description; but, from a paper which accompanies them, one cannot doubt that they were introduced subsequently to the decease of our author.

The white variety was possibly the *T. flexuosa* of Say.

### *Tellina divaricata.*

The locality, being here authenticated by the name of the authority for it, becomes of importance. The only Mediterranean species that will at all agree with the description in the 'Systema' is the *Lucina*, which, originally termed *commutata* by Philippi (Moll. Sicil. vol. i. pl. 3, f. 15), was afterwards recognised by him for the true Linnean *divaricata*. That illustrious naturalist justly remarks, that "magnitudine pisi—gibba—striæ tenuissimæ" and "Habitat in m. Mediterraneo, *Logie*" clearly point to the little and delicately sculptured European shell, rather than to the coarser, larger, and now commoner West Indian species, which usurps the name in almost every collection. As corroborative of these convincing arguments (not that our author would have scrupled to unite the two species), it may be mentioned that the figures of the larger species



in the works of Bonanni, Lister, and Petiver, books habitually consulted by Linnæus, were passed over in silence by him.

### ***Tellina digitaria.***

The *Lucina digitaria* (Philippi, Moll. Sicil. vol. i. pl. 3, f. 19) is present in the collection, and alone exhibits the required characteristics of the definition. The peculiar sculpture of the species rendered its identification an easy task. The locality, being authenticated, proves correct.

### ***Tellina cornea.***

Thanks to Lister's figure, and to the description in the 'Fauna Suecica,' this species has long ago been identified with certainty. Its modern name is *Cyclas cornea* (Turton, Dithyra Brit. pl. 11, f. 14).

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## **C A R D I U M.**

In the revised copy of the 'Systema' the term "alternatis," in the diagnosis, is changed into "recurvis," and "Nymphæ eminentes retrorsum pressæ" is added to the definition.

### ***Cardium costatum.***

The *Cardium costatum* (Wood, Gen. Conch. pl. 56, f. 1) of authors is still to be found in the typical collection, and alone agrees with the description and synonymy of this species.

## **Cardium Cardissa,**

The *Cardium Cardissa* (Mawe, Conch. pl. 7, f. 3) still remains in its marked box in the Linnean cabinet. In our author's own copy of the 'Systema,' "List. t. 318" is annexed to the synonymy: in that of the younger Linné "latere altero e plano-concavo disco elevato" is likewise appended. As usual, the references to plates 42 and 43 of Rumphius' 'Thesaurus' are transposed: here plate 43 should have been quoted, not 42.

## **Cardium retusum.**

The *Cardium retusum* (Chemn. Conch. Cab. vol. vi. pl. 13, f. 139 to 140) of authors still remains in the marked box of the Linnean cabinet. It is, however, mixed with individuals of the *C. subretusum* of Sowerby (Conch. Illust. Card. f. 24), a shell which I can scarcely regard as more than a variety of it. As both will about equally agree with the description, it is expedient to retain the Linnean name for the earlier recognised species.

## **Cardium hemicardium.**

No shell in the Linnean cabinet will agree with the description of this species. The quoted figures and the ample details of the 'Museum Ulricæ' so clearly indicated the *Cardium hemicardium* (Reeve, Conch. Icon. vol. iii. Card. pl. 7, f. 38, a) of authors that its recognition was effected at an early period. In the intended new edition Linnæus has added "Simillima priori, sed absque ano impresso: valvulæ punctis eminentibus exasperatæ."

The expression "at fasciis diversa," in the 'Museum Ulricæ,' is clearly a typographical error for "at facies diversa."

### **Cardium medium.**

The *Cardium medium* of authors (Mawe, Conch. pl. 7, f. 1) remains in the box thus marked in the Linnean cabinet. The specimens described in the 'Systema' had evidently been worn smooth (as is frequently the case with this species): hence "porcis rugulosis" is added in the manuscript of the younger Linné: "muricato-crenatis versus exteriora" is likewise remarked concerning the ribs in the 'Museum Ulricæ,' but the comparison of *medium* to *Cardissa*! in that book throws some doubt upon the identity of the species described in the two different works.

### **Cardium aculeatum.**

This species, which has long been identified by conchologists (*Cardium aculeatum*, Turt. Dithyra Brit. pl. 13, f. 6, 7), originally appeared as *muricatum* in the tenth edition of the 'Systema,' and by a continuation of the same error was so termed in the 'Museum Ulricæ,' although the epithet *aculeatum* had been applied to it in the errata list of the earlier publication.

"List. t. 321, f. 158." and "Pen. Zool. 4, p. 76, t. 50, f. 37." appear as additional references in the copy of the 'Systema' that belonged to the younger Linné, whose father has not enumerated it among the shells in his possession.

### **Cardium echinatum.**

The *Cardium echinatum* (Wood, Gen. Conch. pl. 49, f. 1, 2) of authors is marked for this species in the Linnean cabinet.

## *Cardium ciliare.*

The name *ciliare* has been claimed for three species of *Cardium*, the *C. paucicostatum* of Sowerby, and the fry of the two preceding shells, all of which would doubtlessly, at an earlier period, have been looked upon as identical. No specimen of the first is in the Linnean cabinet, and the expression “*aculeato-ciliatis*” is less suited to its papillæ than to the spines of the other two. In the number of ribs the wretched drawing of Gualtier is more like that shell; in its aculeation it more resembles either of the others. Turton, observing that the young of *aculeatum* was of “a glossy fawn colour,” whilst that of *echinatum* was pure white, and noting the expression “*nivea*” in the ‘Systema,’ has happily referred the *ciliare* to the latter. In this he is borne out by the Linnean cabinet, where the box thus marked contains a young individual of that species. An adult specimen was likewise inscribed with the name “*ciliare*,” so that our author himself had probably detected its identity with *echinatum* before his decease.

## *Cardium tuberculatum.*

Our author has not recorded his possession of this shell in his final list, and has not added any further particulars respecting it in his manuscripts. The two synonyms decidedly pertain to two distinct species (the figures are too rude for positive determination), yet both (more especially that of Rumphius) bear a certain resemblance to the *Cardium tuberculatum* of British writers (Donov. Brit. Shells, vol. iii. pl. 107, f. 2), to which the description in the ‘Museum Ulricæ’ perfectly applies. To that shell, but with a note of interrogation appended, I feel inclined, despite of its proved identity with the *C. rusticum*, to likewise refer the present, believing the one to have been constituted from young and worn individuals, the other (*tuberculatum*) from adult and perfect examples.

### **Cardium Isocardia.**

The *Cardium Isocardia* of authors (Wood, Gen. Conch. pl. 52, f. 1) is marked for this species in the Linnean cabinet, and in the revised copy of the 'Systema' there is added to the published synonyms "List. t. 323."

### **Cardium fragum.**

The *Cardium fragum* (Wood, Gen. Conch. pl. 58, f. 1, 2) of authors is present in the Linnean cabinet, and alone agrees with the specified peculiarities of this species. Our author has, moreover, correctly cited "List. t. 315, f. 152" in his manuscript.

Of the published references, the figure of Rumphius, though rude and probably not designed for this shell, conveys some idea of its general aspect: the engraving of Gualtier, on the contrary, should rather have been referred to *Isocardia*.

### **Cardium unedo.**

It was almost impossible for naturalists to avoid identifying so peculiar a looking shell as the *Cardium unedo*, especially with such a correct synonymy. The box thus marked in the Linnean cabinet still contains the species (Wood, Gen. Conch. pl. 58, f. 3) so long determined. Our author, in his manuscript, has added "List. t. 315" to his former synonyms.

### **Cardium muricatum.**

The box thus marked in the Linnean cabinet contains the *Cardium muricatum* of conchological writers (Wood, Gen. Conch. pl. 51, f. 2), which fairly enough (yet not perfectly) corresponds with the description.

## *Cardium magnum.*

Our author neither possessed this shell, nor has added ought respecting it in his revised copy of the 'Systema.'

Unless the described specimen in the Dronningen Museum should prove an otherwise unknown species, the name *magnum* must disappear from our catalogues, for so inadequately has Linnæus described it that even his own son was unable to recognise it: he surmised, however, that it might be *Cardium leucostoma* (figured for it by Wood), but both size and colouring are against the hypothesis. All conchologists seem to have agreed that the very limited number (19) of ribs ascribed to it in the 'Museum Ulricæ' was a typographical error for 29 or 39; Chemnitz, taking the former number as the correct reading, regarded it as identical with the *Cardium rugosum*, at least his figure (191) is usually quoted for that shell; the "anus ut in *C. muricato*," where its area is said to project at the margin, is rather opposed to this identification, which nevertheless is not devoid of some probability. To Born's idea I cannot for a moment assent; the shape of his shell (the *C. ventricosum* of Lamarck) does not at all correspond to the term "oblonga."

Spengler refers for an illustration to a figure in Seba, which bears much resemblance to, and indeed is usually quoted for, the *C. elongatum* of Bruguière, an extremely large shell with 39 or 40 ribs, which agrees so remarkably well with the details of the 'Museum Ulricæ' as to be queried for "magnum" by Bruguière himself. However inclined to assent to this determination, I prefer the wise reserve of Dillwyn, who, whilst stating the opinion of others upon the subject, avoids pronouncing himself upon so conjectural a matter.

## *Cardium flabum.*

As is wont to occur when Linnæus did not himself possess the type, which was unfortunately the case in regard to this ambiguous species, he has added nothing in his manuscript to the published description. The specimen in the Dronningen

Museum was referred to, as the type, even before the publication of the 'Museum Ulricæ,' and from the numerous details mentioned in that work we might reasonably have hoped to determine the species. It has, however, been rather guessed at than positively identified; at least that certainty has not been attained which is so indispensably necessary before permanently adopting the Linnean name.

Born, regardless of the "nodulis crenatis," considered it to be the Mediterranean *oblongum* (*Cardium sulcatum* of Lamarck). Chemnitz, with much hesitation, has delineated the *Cardium muricatum* as this species. Schröter, with more reason, has figured for it a *Cardium*, which is nearly allied to, if not actually the *Cardium rugosum* of authors (but with some of the submedial ribs unsculptured, as we learn from the description), and Spengler, who sent him the specimen, assents to (and perhaps originated) the identification. Bruguière, Dillwyn and Wood merely transcribe or abridge the description of Schröter. Lamarck cites it with doubt, and Mörch positively, for *C. rugosum*; Schröter's shell (Einleit. Conch. pl. 7, f. 11), whatever it may have been designed for, agrees very fairly with the language of the 'Museum Ulricæ.'

### ***Cardium lævigatum.***

The *Cardium papyraceum* of Chemnitz (pl. 1, f. 8) is marked for this species in the Linnean cabinet, and well agrees with the description thereof. The name *lævigatum* cannot, however, take precedence, since the definition was so imperfect as to baffle all attempts to identify the species by methods patent to all. It is not just to others that simple priority of notice should prevail, where species, through the indolence, carelessness, or incompetence of their first describers, become involved in such obscurity as can only be dispelled through the light thrown upon them by the described examples.

### ***Cardium serratum.***

The *Cardium lævigatum* (Wood, Gen. Conch. pl. 54, f. 3) of Lamarck is marked for this species in the Linnean cabinet, a circumstance which confirms the surmise of Gronovius, and the conclusion that M. Deshayes had arrived at from his careful study of the 'Museum Ulricæ.'

"Nates regulares" is followed by "intus incarnatæ" in the revised copy of the 'Systema Naturæ.'

### ***Cardium edule.***

The *Cardium edule* (Wood, Gen. Conch. pl. 55, f. 4) of authors is marked for this species in the Linnean cabinet.

### ***Cardium rusticum.***

"List. t. 329" is added by our author in his own copy of the 'Systema.' This figure, as well as Gualtier's, the "Concha striata prima" of Rondelet, and the four referred to in Regenfuss, all represent the *Cardium tuberculatum* of British writers. The marked specimen (*C. rusticum*, Reeve, Conch. Icon. vol. ii. pl. 3, f. 16) confirms the inference to be drawn from the synonymy. The reference to Rumphius, whose engraving exhibits an *Arca* with somewhat the look of *granosa*, was erroneous.

### ***Cardium pectinatum.***

Our author has not indicated his possession of this species, which, thanks to the ample details of the 'Museum Ulricæ,' has been satisfactorily recognised by Spengler, Bruguière, Dillwyn, Deshayes and Reeve, in a shell (Chemn. Conch. Cab. vol. vi.



pl. 18, f. 187, 188), which has been termed *Cardium Æolicum* by Born, Chemnitz, Schröter, Wood and Lamarck. There can, indeed, be little if any doubt that the *pectinatum* of Linnæus was either that shell or one most closely allied to it, despite of the reference to Gualtier (whose figure of a pectinated *Cytherea* was in all probability only quoted as illustrative of the peculiar style of sculpture). This citation and the “anus ovatus, impressus marginibus prominulis” are the chief objections alleged by Chemnitz against this identification. The “alba seu rubra” instead of “maculata,” the omission of all mention of the smooth anterior (in the Linnean sense) area (which might lead us to think of *C. lyratum*), and the utter disregard of the figures published by Bonanni (pt. 2, f. 91) and Lister (pl. 314, f. 150, reference to which is made by the younger Linné), form additional objections to any positive determination of the species.

### *Cardium virgineum.*

The generic location of this shell, which, although described at some length, has scarcely been satisfactorily identified, was a matter of some doubt to Linnæus himself, for in his own revised copy of the tenth edition of the ‘Systema’ he had placed it in *Macra*. I find no mention of it in the pages of Chemnitz: Schröter merely reproduces the original description. Bruguière, followed by Dillwyn, hint at the possibility of its having been constituted from a specimen of *C. edule* var. *glaucum*, and Gmelin, whilst copying the language of Linnæus, cites the *C. rugatum* (*apertum* of Chemnitz) as a variety. The “rugis transversis membranaceo-recurvatis” cannot, however, be affirmed with truth of either of these shells. Wood omits it as too ambiguous for determination.

Since our author, who has transferred this species to *Macra* in his manuscript, has likewise indicated his possession of it, recourse has been had to that tedious yet satisfactory mode of analysis (in default of any marked examples having been discovered) spoken of in the Preface, and as one shell, and one alone, in the entire collection will agree with the description, no reasonable doubt can be entertained of its typical authority: the name, however, cannot take precedence, for, without the

actual examination of the Linnean cabinet, no soundly-based conclusion could possibly have been arrived at from such meagre data as those published. The logical conjecture, if I may so term it, of Philippi, who, in his valuable paper on the more ambiguous *Testacea* of Linnæus, has referred the *Cardium virgineum* to *Cyrena*, and suggested the *fluminea* of Müller for the species, is confirmed by the specimen, of which Philippi's delineation in his 'Neuer Conchylien' (vol. ii. Cyr. pl. 1, f. 3) may be regarded as a fair portraiture.

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## M A C T R A .

The genus *Mactra* had no place in the earlier editions of the 'Systema.' Three of its species, *corallina*, *stultorum* and *solida* were placed, in the tenth edition, with the *Cardia*, and one (*lutraria*) with *Mya*: the other four are additions. In the dismemberment of *Cardium*, the *C. triste* (ed. 10, No. 74) has been altogether passed over.

Linnæus had proposed to append the term "lamellatis" to the published description of the lateral teeth.

### *Mactra Sprengleri.*

Linnæus was indebted to Spengler for very many of the additional shells which he published in the last edition of his great work. The name is generally misprinted throughout the 'Systema,' but in the present instance was corrected by our author in his revised copy.

Notwithstanding that naturalists were unaided by any reference to an engraving, no serious difficulty seems to have been experienced in determining this scarce but well-known species (Sowerby, Genera Shells, Mact. f. 1), thanks probably

to the figure of Chemnitz (Conch. Cab. vol. vi. pl. 20, f. 199, 200), whose specimen was also received from Lorenz Spengler. The authenticated locality is correct.

### ***Mactra plicataria.***

The *Mactra plicataria* (Chemn. Conch. Cab. vol. vi. pl. 20, f. 202, 203, 204) of authors still remains in its marked receptacle in the Linnean cabinet. The shell, being strongly characterised, was recognised by conchologists without difficulty.

### ***Mactra striatula.***

This *Mactra* still remains in its marked receptacle in the Linnean cabinet, and correctly agrees with the characters attributed to it. Not being able to discover any exact portraiture of it, nor to assert with absolute certainty that it has received any modern appellation (it nearly approaches the *angulifera* and *angusta* of Reeve's Monograph of *Mactra*, but is pronounced distinct by that eminent authority, Mr. Cuming; it also reminds one of the *M. Californica* of Conrad, Journ. Acad. Nat. Sc. Philad. vol. vii.), I have given a figure (pl. 2, f. 3) and an enlarged description of it in the present work.

MACTRA STRIATULA, *Lin. (haud auctorum)*. Testa ovali-subtrigona, tenuis, convexa, subpellucida, subæquilateralis, alba, præcipue sublævigata, umbonibus tantum subplicatis. Latus anticum paullo longius, subangulatum; extremitas postica rotundata. Margo ventralis convexus; dorsalis, postice satis declivis, et prope nates acutas subretusus, deinde convexiusculus, antice subrectus et valde declivis. Costa umbonalis antica carinata; areola subexcavata: lunula subobsoleta. Long. 1, lat. 1·6 poll.

## *Mactra glabrata.*

The *Mactra Lisor* (Hanley, Recent Shells, Sup. pl. 11, f. 54, 55) still remains in the marked receptacle of *M. glabrata* in the Linnean cabinet, and admirably agrees with the description of that species. The *Cardium triste* of the 'Museum Ulricæ,' altogether omitted in the last edition of the 'Systema,' may possibly have been identical.

## *Mactra corallina.*

The name *corallina* was derived from the "Concha corallina dicta" of Bonanni, whose figure (2, t. 53), possibly meant for a *Terebratula*, was thus cited in the tenth edition of the 'Systema' (perhaps instead of 2, t. 52, which more resembles the other synonyms, but seems meant for *Scrobicularia piperata*). These numerals, by a typographical blunder, became changed to "3. t. 5—2" in the twelfth edition, and in the Vienna reprint to "3. t. 2—5." The species is altogether too succinctly described for certain recognition, and the synonymy is most incongruous. A portion, "antice posticeque obtusissima," of its original description in the tenth edition, where it is located next to *solidum*, is omitted in the twelfth edition, where it is placed next to *stultorum*. Spengler has cited the figures 220, 221 (*M. lactea*) of Chemnitz's sixth volume for the Linnean *corallina*; and, in truth, the shell there delineated, which is common at Algiers, and is closely allied to, if not a white variety of, the *inflata* of Philippi, bears so much resemblance to the quoted engravings of Gualtier and Rondelet, that I entertain but little doubt of its being the amended species of the twelfth edition. Chemnitz himself, however (Conch. Cab. vol. vi. pl. 22, f. 218, 219), has selected a different (Guinea) species for his ideal; his views are followed by Gmelin and Schröter. There exists a small specimen of the elliptic variety of *Mactra solida* in the Linnean collection, wrapped in a paper on which is written (and then crossed) "nondescripta,"

in an unknown handwriting, and "*corallina*" in another, which has much the aspect of our author's. It is not impossible, then, that this shell was the original of the *corallina* of the tenth edition, the name *solidum* being reserved for the triangular form of that species. Plancus's figure, which was not queried in that edition, is not so very unlike it: it was meant possibly, judging from the text, for *Tellina nitida*, but has been condemned as inaccurate by Plancus himself.

### ***Mactra stultorum.***

Two very nearly allied shells (perhaps, after all, only varieties) appear to have been included under this name. That of the tenth edition (of which a marked specimen, pl. 2, f. 8, still exists in the Linnean collection), where it first appeared under the name of *Cardium stultorum*, seems the *M. inflata* of Philippi's '*Molluscorum Siciliæ*,' of which the *Mactra stultorum* of the English shores seems an elongated form. The earlier description is very differently worded from the final one, and limits more particularly the colouring "*pallida, radiis obsoletis albis.*" It contains many particulars not mentioned in the very succinct notice of its characters in the twelfth edition of the same work. The original account of its teeth was rendered unnecessary by the formation of a genus of whose dentition it may be regarded as the type, but the "*subrotunda, æquilatera—fragilis*" were too important specialities to have been so lightly passed over. The reference to Gualtier, whose figure (pl. 71, f. C.) has much the appearance of this *Mactra*, was likewise omitted. In lieu of these expressions, we find "*subdiaphana—intus purpurascente, vulva gibba.*" The latter characteristic is worthy of note, being indicated as one of the chief distinguishing features of the *Mactra stultorum* of Philippi from its most closely allied congener *M. inflata*. It is most probable, then, that the former of these two was intended in the twelfth edition; though it must be confessed that the tumidity of the part here termed the "*vulva*" is also occasionally apparent in *inflata*.

## ***Maetra solida.***

The *Maetra solida* of British writers (Brown, Ill. Conch. G. B. pl. 41, f. 3) still remains in its marked receptacle in the Linnean cabinet, and aptly corresponds with the characters attributed to it. Our author has corrected his erroneous reference to the third (instead of the second) part of Bonanni. "Penn. Zool. iv. t. 51, f. 43, A," and "List. Conch. t. 253, f. 87," are appended to the synonyms in the copy of the 'Systema' which belonged to the younger Linné.

## ***Maetra lutraria.***

The *Lutraria oblonga* (Brown, Ill. Conch. G. B. pl. 43, f. 2) of authors is marked for this species in the Linnean collection. The references to Lister and Bonanni are correct; the M in that to Rumphius is a typographical blunder for N? (as in ed. 10, where a further description of the tothing is appended). "Penn. Zool. iv. t. 42, f. 44," and "List. 415, f. 259," are annexed to the synonymy in the copy of the 'Systema' which belonged to the younger Linné.

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## **DONAX.**

### ***Donax scortum.***

This shell was originally located in *Venus* by our author. Its identity with the succeeding species appears, from the following inscription upon a specimen of it (*Donax scortum*, Chemn. Conch. Cab. vol. vi. pl. 25, f. 245 to 247), "*Donax*

*pubescens*, *Venus scortum*," to have been eventually ascertained by Linnæus. Judging from the expression "glabra" in the tenth edition, and the reference to Argenville, whose figure, if meant for, and its outline is not unlike to, the present species, was clearly taken from an uncoated specimen, the original example was artificially polished. In the 'Museum Ulricæ' the synonym of Gualtier was rightly omitted. "List. t. 377.—Pet. Gaz. 19, f. 11," are cited in the Linnean manuscript. The locality "America" is incorrect. It is common on the coast of Malabar.

### **Donax pubescens.**

Since the name of either this or the preceding must be abolished, and the latter, as the remarks on *scortum* demonstrate, was most incorrectly defined in the tenth edition, where the former, on the contrary, though not illustrated by a reference to a figure, was fairly enough defined, it seems both just and expedient to retain *pubescens*, rather than the immodest epithet of the more aged shell.

"Vulvâ planâ; rimâ ovatâ" appears in the Linnean copy of the 'Systema,' where also "Rumph. Mus. t. 43, f. F" is correctly cited. Both stages of growth are fully described in the 'Museum Ulricæ.'

### **Donax rugosa.**

The *Donax rugosa* (Knorr, Délices, pt. 6, pl. 28, f. 8) of authors is marked for this species in the Linnean cabinet, and accurately corresponds with the brief description in the 'Systema.' The cited figure of Gualtier is so bad that it would be unsafe to pronounce what it was designed for: it was probably, however, the nearest approximation to the species which could then be indicated. "Albido-radiata" and "rima ovata" are added in manuscript to the diagnosis by Linnæus: "lævis" is appended to it by his son.

The description of *D. rugosa* in the 'Museum Ulricæ' answers better to *ringens*.

## **Donax trunculus.**

In both the writings and the collection of Linnæus, two species, the *D. anatinus* and *trunculus* of Lamarck, the latter considered typical by the French, Germans and Italians, the former by nearly all the writers on British conchology, were manifestly confounded under this designation. Since the name can only be retained for the one or the other, it is requisite to balance the claim on either side, in order to arrive at an equitable decision. The *D. trunculus*, as it appeared in the tenth edition of the 'Systema,' had four synonyms attached to it. Of the authors cited, Gualtier and Bonanni represent the Mediterranean shell; Lister alone the English one; Argenville, in all probability, neither; his wretched figure (of *denticulata*?) has, however, far more the aspect of the abruptly truncated Mediterranean one than of its rival. In the final edition the figures of two more shells, whose features are opposed to the definition, are erroneously referred to; Klein's, copied from Lister (Hist. Conch. pl. 275, f. 216, top), being more like *anatinus*, pairs off with Adanson, whose representation of *D. elongata* is more like the rival *trunculus*: the words of the 'Fauna Suecica,' being merely copied from the 'Systema,' that synonym must be regarded as neutral. The preponderance of synonyms, then, is in favour of the more abruptly truncated Mediterranean shell; far more so is the testimony of the description: the expression "antice lævi" being perfectly accurate when applied to that shell, but incorrect when referred to *anatinus*, whose shorter extremity is always more or less corrugated in a concentric direction; "intus violacea," too, is a character habitual to the former, comparatively rare in the latter; whilst the negation to the species, in the 'Museum Ulricæ,' of lateral teeth (which are developed in the latter, but not in the former), furnishes a most important argument for restricting the name *trunculus* to the Mediterranean shell figured by Born (Test. Vind. pl. 4, f. 3, 4).



### **Donax striata.**

The *Donax striata* of Hanley's 'Recent Shells' (Knorr, Délices, pt. 6, pl. 7, f. 7), is marked for this species in the Linnean cabinet, and agrees correctly with its description in the 'Systema.' Our author, in his proposed thirteenth edition, has wisely changed "vulva" to "rima," and, in his directions to the printer, written "locatur post 103" (that is to say, before *rugosa*, to which it is nearer allied than to *trunculus*).

### **Donax denticulata.**

The *Donax denticulata* of authors is still present in its marked receptacle in the Linnean cabinet. The typical specimens (Donov. Brit. Shells, vol. i. pl. 24) correspond accurately with the characteristics ascribed to the species, of which examples (probably from ballast) are often picked up on the shores of the Mediterranean; but the mollusk itself is West Indian.

### **Donax cuneata.**

Linnaeus has only indicated his possession of this species in the list which accompanies his tenth edition; there are, however, specimens (Born, Testacea, vignette p. 52) of the *Donax cuneata* of authors in the collection, which accurately correspond with the fuller description in the 'Museum Ulricæ.' In that work, however, another species appears to have been mixed up with it (perhaps the *D. faba*, Chemn. Conch. Cab. vol. vi. pl. 26, f. 266, 267, of which there are also examples in the collection), judging, at least, from the expression "antice—glabra aut scabra," the sculpture of the shorter extremity being a character of extreme importance in the genus *Donax*. The "parva," too, of the 'Systema' is not exactly suitable to *cuneata* in relation to other *Donaces*. Nevertheless, unless the type in the Dronningen Museum, which even before the publi-

cation of the 'M. U.' was thus referred to in the earlier edition of the 'Systema,' should prove a different species, it is not expedient to remove the specific appellation from that species to which it has so long been attached.

### **Donax scripta.**

Despite the incorrectness of the synonymy this species has long been determined by conchologists, since the figures of Klein, Lister and Rumphius—the F in the twelfth edition (not in the tenth) is a typographical error for *f*—exhibit a shell whose characters are in accordance with the definition in the 'Systema.' Gualtier's engraving seems more like *trunculus* or some allied *Donax*, and Bonanni's delineation of a Neapolitan shell (hence the erroneous locality) was probably intended for *Tapes geographica*: neither of the two exhibit the indicated characteristics. The species is clearly the *Meroë* (*Cytherea*) *scripta* (Chemn. Conch. Cab. vol. vi. pl. 26, f. 261), of which there remain examples, that alone agree with both description and figures, in the Linnean collection.

### **Donax muricata.**

Our author most unfortunately did not possess this shell, of which he has added no further particulars in his manuscript. Although the description of it in the 'Museum Ulricæ' is far from scanty, scarcely even a conjecture has been added respecting it; the old compilers having satisfied themselves with copying the original recorded characters. Nothing but the sight of the typical example in the Dronningen Museum will enable us to logically demonstrate even the modern genus in which this most ambiguous shell should be located. I know of no *Donax* that will correspond to the description; the sculpture, indeed, is more that of a *Cardium*, a *Lucina* or a *Cypricardia*. What are we to understand by the following passage, extracted from the 'Mus. Ulricæ,' "Margo anterior

denticulatus dentibus obtusis; anticus vers et posticus integerrimi" ?

### **Donax Irus.**

The tolerably ample description, the cited figure of Gualtier, rude, yet in accordance with the definition, and the authenticated locality, enabled naturalists to recognise this species from an early period. The *Venerupis Irus* (Donov. Brit. Shells, vol. i. pl. 29, f. 2) of authors rests in the marked receptacle of this shell in the Linnean cabinet, and alone of the objects therein preserved coincides with the features of the definition.

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## **V E N U S .**

Our author, in his proposed new edition of the 'Systema,' had designed the separation of the *Veneres* into two sections, characterised by their ventral margins. "Dividenda in margine integerrimo et crenulato."

### **Venus Dione.**

The well-known *Cytherea Dione* (Sow. Thes. Conch. vol. ii. pl. 132, f. 110) is marked for this species in the Linnean cabinet.

### **Venus Paphia.**

The *Venus Paphia* of most writers (Reeve, Conch. Syst. vol. i. pl. 68, f. 1) is marked for this species in the Linnean cabinet. "Cren." for "margine crenulato" and "lab(ia) truncata" are added in manuscript to the revised copy of the

'Systema,' where, also, "List. t. 279" is annexed to the synonymy. The Portuguese locality, to say the least, requires confirmation.

### *Venus Marica.*

Our author having declared his possession of this species, as one shell, and one alone in the entire collection will agree with the specified characteristics, no doubt can be entertained of the typical authority of that specimen. It is, as might be expected, the well-known *Venus Marica* of conchological writers (Encycl. Méth. Vers, pl. 275, f. 2), who easily recognised it from its peculiar style of lamellation. The "cren." (for *margine crenato*) that is added in the manuscript corrects the error of the 'Museum Ulricæ.'

### *Venus Dysera.*

The illustrious Swede had included so many essentially distinct shells as varieties of his *Dysera*, that upon the necessary dismemberment of the species not a single one was left in possession of the original name.

Linnæus, in the twelfth edition of his 'Systema,' had elevated the variety *b* of the earlier edition (the var. *z* of the M. U.) to the rank of a species (*Paphia*), and in his own copy of that work he has likewise expunged all the other references except Klein and the figures K and Q of Argenville. The first of these three, being a mere copy of the erased figure of Lister, is virtually repudiated likewise; and the figure Q of Argenville represents the succeeding species. Hence a single drawing (Arg. pl. 24, f. K), which, although rude, is manifestly intended for the *Venus plicata* of authors, instead of many discordant references, illustrates the intended species, and that engraving, moreover, is the one cited in both editions as the typical form of *Dysera*.\*

\* Since writing the above, I perceive with pleasure that Mörch (Cat. Yoldi) has arrived at a similar conclusion.

Among the shells erroneously introduced into the synonymy of the twelfth edition (and on afterthought wisely rejected) were *Venus cancellata* (List. t. 278, f. 115) and *V. rigida?* (List. f. 123): "Gualt. t. 88, f. D" (*V. calophylla?* the *thiara* of Reeve, not Chemn.) was likewise quoted for one of the numerous supposed varieties in the 'Museum Ulricæ.'

### *Venus verrucosa.*

The *Venus verrucosa* of most writers (Crouch, *Introductio Lam. Conch.* pl. 7, f. 6) still remains in the marked receptacle of this species in the Linnean cabinet. Our author, in his manuscript, has correctly transferred the erroneous references of the last species, "Pet. Gaz. t. 93, f. 17," and "List. t. 284 (f. 122)," to the present one, and added "Mediterranea" and "lab(ia) truncata" to his former details. The "11" of the reference to Gualtier (whose drawing, though not accurate, and possibly, indeed, not meant for this shell, exhibits somewhat of its general aspect) is a misprint for H. Plate 54, fig. 48, of the fourth volume of Pennant's 'British Zoology' is also quoted in the manuscript of the younger Linné.

### *Venus casina.*

To the very brief description of this species "Lab(ia) truncata" is the only addition in our author's MS. Neither does his collection enlighten us to any great extent; for "pone anum canaliculato" cannot strictly be applied to any of the *Veneres*, and more than one shell will equally answer to the other scanty requirements of the unillustrated diagnosis. A fossil specimen of the *V. casina* of authors (*Trans. Lin. Soc.* vol. viii. pl. 2, f. 1) is, however, present in the cabinet, which corroborates in some slight degree the traditional identification.

## *Venus cancellata.*

The *Venus cancellata* of Lamarek (Chemn. Conch. Cab. vol. vi. pl. 28, f. 290) and others still remains in its marked box in the Linnean cabinet, and alone in the collection agrees with the description and amended synonymy. One specimen has even the name written on it; but the handwriting seems scarcely that of our author. It is somewhat curious that the same name was applied, in 1781, to the same species in Gronovius's 'Zoophylacium,' although the tenth edition only of the 'Systema' had been consulted (or at least referred to) for the *Veneres*.

It has been plausibly suggested that, as the *V. ziczac* of the 'Museum Ulricæ' was referred to as a synonym, it behoves us to adopt that name; but that work again reproduces the essential characters specified in the tenth edition of the 'Systema,' the "lentiforimi" of which is so utterly inappropriate for a heart-shaped shell, that no one could have recognised the *V. cancellata* (a most expressive appellation) by such a description. The omission of all mention of the radiating costellæ in the 'Museum Ulricæ' raises, moreover, a suspicion that the described specimen of that collection was not identical with the cancellated or typical form ("striis longitudinalibus") of the 'Systema.' Our author, in his revised copy, has correctly cited "List. t. 278" (a reference which he has correctly transferred from *Dysera*), and added "lab(ia) truncata" to his previous description.

The "Gualt. t. 88, f. D" was probably meant to illustrate the anomalous variety (for a cancellated shell) "absque his (i. e. longitudinalibus) striis": it reminds one much of *calophylla*, and was previously quoted for the var. *e* of *Dysera* in the 'Museum Ulricæ.'

## *Venus gallina.*

Specimens of the *Venus gallina* of the Mediterranean Sea (Chemn. Conch. Cab. vol. vi. pl. 30, f. 309) are enclosed in a

paper, on which this name is written, in the Linnean collection. This locality was the original and sole one mentioned in the tenth edition of the 'Systema'; the allied Swedish form (*striatula*) and the implied Asiatic one having been annexed to the species at a subsequent period. Bonanni's figure, which represents *V. Chione* (whose margin is not crenated) is rightly expunged from the synonymy in the copy of the younger Linné.

### *Venus petulca.*

Any attempt to recognise this shell, whose remarkably short description was not further illustrated by a pictorial or indirect definition, must have proved conjectural. The original description in the tenth edition appeared unaltered in the final one; in the former our author has indicated his possession of it; in the latter he has omitted it from his list. No shell is marked for it in his collection, where too many equally approach its declared features to permit of a decided appropriation of the name to any individual. The specific epithet *petulca* (sportive, gamesome, butting like a goat) is not suggestive. It is for the advantage of science to omit the species from future catalogues.

### *Venus flexuosa.*

I can find but a single shell in the whole Linnean collection that possesses the required characteristics of this species; and as our author has announced his possession of an example, and the specimen so exactly corresponds with the language of the 'Systema,' that one can scarcely avoid believing that it was the original one described, no reasonable doubt can be entertained of its typical authority. The individual has been delineated (pl. 4, f. 1) in the present work, as I cannot readily discover an exact portraiture of it: perhaps the nearest approach to its features may be found in the drawing in the 'Encyclopédie Méthodique,' Vers, pl. 267, f. 1. Linnæus, who laboured under a similar difficulty, has referred us to Rumphius (42, not 43 as

in the text), which was not intended for this species: in his own copy of the 'Systema' he has added, however, "Pet. Gaz. t. 25, f. 8," which figure gives an excellent idea of the ordinary beaked form of the shell in question. The specimen (*Cytherea flexuosa* of Lamarck) being much worn does not exhibit the characteristic rostration to any marked extent, which circumstance accounts for the omission of that character in the description. There is a specimen in the cabinet of an allied species, *V. macrodon* (as in Delessert), marked for this species, but with the name purposely scratched through.

### *Venus Erycina.*

The illustrious Swede having recorded his possession of this shell, and there being only a single specimen (Chemn. Conch. Cab. vol. vi. pl. 32, f. 337) in the whole of his collection which answers to the description, no reasonable doubt can be entertained of the typical authority of that individual. It is the *Cytherea Erycina* of authors: there is no allied species in the cabinet. "List. t. 268," which bears much resemblance to, even if not intended for, this shell, is cited in the revised copy of the 'Systema,' where "int." for "margine integerrimo" is likewise written.

### *Venus mercenaria.*

The *Venus mercenaria* of most writers (Chemn. Conch. Cab. vol. x. pl. 171, f. 1659, 1660) is marked for this species in the Linnean collection. The correctness of the authenticated locality greatly assisted its early recognition. Lister (An. Angl.) represents a fossil shell of the size and with much the general aspect of this species.

Plate 271, f. 107, of Lister's 'Historiæ' is correctly cited in the manuscript of the younger Linné: "cren." for "margine crenulato" is added in our author's copy of the 'Systema.' The shell supposed to be it in the 'Fauna Suecica' is referred to the next species by Loven: the description, however, was



extracted from the tenth edition of the 'Systema,' and is not suited to *Islandica*.

### *Venus Islandica.*

The *Cyprina Islandica* (Donov. Brit. Shells, pl. 77) of authors, the *C. vulgaris* of Sowerby, is marked for this species in the Linnean cabinet. The original specimen, judging from the description, had probably lost its outer coating.

"Int." for "margine integerrimo" and "Pen. Zool. iv. t. 53, f. 47" were correctly added in the revised copy of the 'Systema.' Plate 272, f. 108, of Lister's 'Historiæ' is also justly referred to in the manuscript of the younger Linné. The supposed European forms of *mercenaria* really belong to this species, which was not constituted when they were erroneously referred to the preceding shell.

### *Venus Chione.*

As might be expected, the *Cytherea Chione* of conchological writers (Turt. Dithyra Brit. pl. 8, f. 11) is marked for this species in the Linnean collection. Of the figures referred to, those of Regenfuss and Gualtier alone accurately represent the species; the other two are approximations only.

### *Venus maculata.*

The well-known *Cytherea maculata* (Chemn. Conch. Cab. vol. vi. pl. 33, f. 345) is present in the Linnean collection, and alone agrees with the description and synonymy. The figures cited were all probably intended for this shell, and caused its easy and early recognition.

## Venus meretrîx.

Our author did not possess this species. It appeared in both editions of the 'Systema' with a precisely similar description: the only addition in the final one being a reference to the details of the 'Museum Ulricæ.' The illustrative figure in all these works was the F of Argenville (pl. 24), which seems to me a foreshortened view of the *Cytherea lusoria* of Chemnitz and Lamarek, but was converted into a *C. zonaria* in the corrected edition by Favanne: moreover, it is not unlike the *meretrîx* of Chemnitz (*impudica*, Lam.). It was assuredly designed for one of these three shells; the second of which, with its peculiar colouring and subtrigonal shape, is not so suited as the other two to the original diagnosis. The description in the 'Museum Ulricæ' is applicable alike to the first or third of these three shells, and, probably, also included several others. In a case of doubt, like this, it seems expedient to continue the name to the shell (Chemn. Conch. Cab. vol. vi. pl. 33, f. 347, 348) which has so long borne it, especially as the specific individuality of *C. lusoria* is still a matter of uncertainty.

## Venus lata.

The delineated example (plate 1, fig. 2, 3), which I cannot positively refer to any described shell, is marked for this species in the Linnean collection, and accurately corresponds to its description. The latter being too brief, I hold it advisable to somewhat enlarge it.

C. LÆTA, *Lin.* (haud auctorum), *C. testâ* tumidâ, subquadrato-rotundata, subobliquâ, valde inæquilaterali, satis validâ, lævigatâ, nitidiusculâ, luteâ, radiis angustis candidis, subobsoletis pictâ; margine ventrali subarcuato; dorsali vix convexo, antice paullo, postice satis declivi; superficie internâ albâ, antice et postice livido purpurascente fucatâ; lunulâ magnâ, ovato-cordatâ, lineâ tantum circumscriptâ, haud retusâ; areolâ nullâ; margine interno integerrimo. Long. 1 poll.

The referred-to engraving of Gualtier can only be regarded as an approximation to a species of which I know no characteristic representation, and of which I could find no second example even in the magnificent collection of Mr. Cuming.

### *Venus castrensis.*

The *Cytherea castrensis* of authors (Chemn. Conch. Cab. vol. vi. pl. 35, f. 370) is marked for this species in the Linnean cabinet. The synonymy (although marred by one or two misquotations, as pt. 2 instead of pt. 3 of Bonanni, pl. 42 instead of 43 of Rumphius, and vol. ii. instead of i. of Regenfuss) is essentially correct. Figure 4 of the last-mentioned work (pl. 1) must, however, be excluded. Linnæus has also cited "List. 287" in his manuscript.

### *Venus Phryne.*

Our author did not possess this species, which originally appeared as forming a portion of the 'Museum Ulricæ.' I find, however, no species thus designated in that work, nor any to which the meagre description can be referred with plausibility. The citation of "M. U." is omitted in the final edition of the 'Systema.'

It is not impossible that the *V. Phryne* was founded upon one of the many semistriated species allied to the preceding, or that Solander was correct in referring it to *V. flexuosa* as a variety (*macrodon*?), yet, as the brief description is applicable to half-a-dozen shells at the least, it is far better to exclude so inadequately defined a species from our catalogues.

### *Venus Meroë.*

The *Cytherea Meroë* of most writers, *Meroë picta* of Schumacher (Chemn. Conch. Cab. vol. vii. pl. 43, f. 450, 451, 452), is marked for this species in the Linnean cabinet.

“List. t. 378, f. 221” and “Pet. Gaz. t. 13, f. 8” are added in the copy of the younger Linné.

### *Venus deflorata.*

The *Sanguinolaria rugosa* (Chemn. Conch. Cab. vol. vi. pl. 9, f. 79) is marked for this species in the Linnean cabinet, and corresponds to the description in the ‘Systema.’ The recorded locality is erroneous; most West Indian shells, indeed, are ascribed to the European seas by our author. “Int.” for “margine integerrimo” is added in his manuscript.

### *Venus fimbriata.*

The *Corbis fimbriata* (Crouch, Introd. Conch. pl. 6, f. 2) of the Lamarckian school of conchology is marked for this species in the Linnean cabinet. An error exists in every synonym attached to the description in the final edition of the ‘Systema.’ C and G in the references to Argenville and Gualtier must be transposed (which is the reading of the ‘Museum Ulricæ’ and of the previous edition of the ‘Systema’); 42 must replace 43 (our author invariably transposes these two plates) in the citation of Rumphius; Klein and Lister (f. 172 belongs to plate 335) must be omitted, for they belong to the succeeding species.

### *Venus reticulata.*

The *V. reticulata* is not enumerated among the shells which were accumulated by the illustrious Swede.

As the species stood in the tenth edition of the ‘Systema,’ it was impossible to recognise it: the two references to figures, with which it was furnished, being alike incorrect. The former of these (Rumphius, pl. 43, f. H) was omitted in the final edition, the latter is expunged in our author’s revised copy of that work.

The description in the 'Museum Ulricæ' is so characteristic (the yellow teeth combined with the latticed sculpture), that the intended species (*Venus corbis* of Lamarck; Chemn. Conch. Cab. vol. vi. pl. 36, f. 382, 383) may be readily identified by its perusal. This is a fortunate circumstance, since not one of the engravings referred to as illustrative in the twelfth edition is a veritable representation of the shell in question: they are all orbicular, not subcordate as required, and are most of them erased as synonyms in the manuscript of our author. "Gualt. t. 83, F" and "List. t. 335, f. 172" are correctly cited in the copy of the younger Linné: the "cren." for "margine crenato" in the father's copy corrects the error of the 'Museum Ulricæ.'

### *Venus squamosa.*

Rumphius, pl. 44, f. M, accurately represents the *Venus squamosa* of authors (Chemn. Conch. Cab. vol. vi. pl. 31, f. 335), the features of which shell are in harmony with those specified in the too succinct description of the species, which may consequently be regarded as pictorially defined.

The manuscript of Linnæus, in whose collection I find nothing that will answer to the description of *squamosa*, furnishes us with the following additional details, which corroborate the established identification:—"Testa supra vulvam producta, striis decussatis transversalibus submembranaceis recurvis: margo crenulatus. Anus ovatus, ferrugineus, magnus. Vulva longa, clausa, albida, lævis." Our author has also cited "Gualt. Test. t. 83, f. G," a very rude engraving, which, nevertheless, reminds us of the same species.

### *Venus tigrina.*

The *V. tigrina* appears twice in the twelfth edition of the 'Systema.' Nor is this the only mistake. Our author has united two shells, which he had clearly distinguished in his tenth edition, where, likewise, he had appended correct localities. Although termed varieties by Lamarck, their differences are

justly held of specific extent by Reeve, in his recent monograph of the genus *Lucina*. The one, the *V. tigerina* (ed. 10, p. 688, No. 112) of the Indian Ocean, is described by Linnæus as decussated by crenated striæ; the other, the tropical *V. orbicularis* (ed. 10, p. 688, No. 118) is characterised, in contradistinction, as compressed, and as having its radiating sculpture more strikingly apparent than its concentric. These are precisely the distinguishing peculiarities of the decidedly convex *L. exasperata* (Reeve, Conch. Icon. Luc. pl. 1, f. 4), in whose coarse decussation the concentric, if either, preponderates over the radiating sculpture, and of the flattened *L. tigerina* (as represented in the Encycl. Méth. Vers, pl. 277, f. 4). In confirmation of this, a specimen of the latter was found, marked (118, 136) for *V. orbicularis*, of the former (112) for *tigerina*, in the Linnean collection.

The figure of Rumphius (t. 42, f. H), cited for *tigerina*, fairly represents *exasperata*, and the “*exasperata striis elevatis transversis undatis crenatis, et striis minoribus longitudinalibus. Margo scaber, atro purpureus*” of the ‘Museum Ulricæ’ is certainly more adapted to that shell than to the other.

It is not, perhaps, expedient to change the accepted nomenclature, for the name *tigerina* has been almost invariably accepted for the *tigerina* var. of the twelfth edition.

### ***Venus prostrata.***

Plate 1, figure 7, of this work exhibits the example marked for this species in the Linnean cabinet. It is the *Artemis prostrata* of Reeve (Conch. Icon. vol. vi. pl. 4, f. 23), whose excellent figure was not published when the three first plates of this work were engraved. It is not the *V. prostrata* of Chemnitz, but agrees well with the figure in Born’s ‘Testacea’ (pl. 5, f. 6).

The peculiarities of sculpture are not mentioned in the details of the ‘Museum Ulricæ’; possibly, then, the shell there described was not identical with that of the earlier publication.

### **Venus Pennsylvanica.**

The numerals 139, which indicate the succeeding species, are written upon a *Lucina* in the Linnean collection, which perfectly agrees with the definition of this shell. This is clearly a slip of the pen for 138, for our author did not possess the *incrustedata*, and the characters of the specimen are not agreeable to those attributed to the latter. The example referred to is a worn specimen of the *Lucina Pennsylvanica* of authors (Chemn. Conch. pl. 37, f. 394), and is therefore confirmatory of the received opinion. The species first appeared in the tenth edition of the 'Systema,' and, although too briefly defined, was recognised by the rude yet harmonising figure of Argenville. The violet-edged shell subsequently distinguished as *V. Pennsylvanica* in the 'Museum Ulricæ' is of course distinct (a *Cyrena*?).

### **Venus incrustedata.**

Our author did not himself possess this shell, at least he has not recorded it as forming part of his collection. The specimen in the 'Museum Ulricæ' was referred to as typical, even in the earlier edition of the 'Systema.'

The surmise is not an improbable one, that the species was constituted from a diseased and polished *Lucina* of the *tigerina* group (perhaps of the next species), but no positive certainty can be attained to, without examination of the type in the Dronningen Museum.

### **Venus punctata.**

Our author has not recorded his possession of this species. The reference to Rumphius was clearly a typographical error, the same figure having been quoted previously by our author for another species: moreover, neither the G of plate 42, nor of

43 (so constantly transposed by Linnæus) exhibits the required longitudinal sulci. The citation is corrected, in the copy of the 'Systema' which belonged to the younger Linné, to "Rump. t. 42, f. D," which engraving both corresponds with the description in the 'Museum Ulricæ' and with the shell so long recognised for it, the *Lucina punctata* of more modern writers (Sowerby, Genera Shells, *Lucina* f. 1).

### *Venus exoleta.*

Both *Artemis exoleta* (Poli, Test. Sicil. pl. 21, f. 10) and *A. lincta* of Pulteney are marked for this species in the Linnean cabinet: since the former alone agrees with the terms of the description, the specific name must consequently be retained for it solely.

The synonymy requires much emendation: the "Pet. Gaz." is clearly an error for "List. Conch." there being no plate 291, f. 127 in Petiver's 'Gazophylacium'; and the species being correctly represented in that plate of Lister's 'Historiæ Conchyliorum.' Gualtier's engravings, though possibly intended for this species, are too uncharacteristic for future citation: Lister, f. 98 of plate 262 is *V. castrensis* or an allied species, which approaches the Linnean example in shape and colouring. The account in the 'Fauna Suecica' has been copied from that in the tenth edition of the 'Systema.'

Linnæus, in the final edition of his 'Systema,' has unwisely attached to this species, as a variety, the apparently distinct shell which he had previously termed *Venus lupinus* (ed. 10, p. 689). Unmarked examples of the *Artemis lupinus* (the *A. lincta* of Philippi) are to be found in the typical collection; but their presence, though it strengthens the probability of the assumed identification, proves nothing, since the very insufficient description is equally applicable to several other shells in the Linnean cabinet.

The *V. exoleta* of the 'Museum Ulricæ,' described as being white externally, and crusted internally with a pale, yellowish substance, was possibly *lincta*, which occasionally is, I fancy, thus stained.



### *Venus borealis.*

The *Lucina radula* of Lamarek (Donov. Brit. Shells, vol. iv. pl. 130) is marked for this species in the Linnean collection, and still reposes in its ancient receptacle. The specimen perfectly agrees with its description, the ridges being more distant than in most examples. The reference to Lister is rightly erased in the manuscript of the younger Linné; the engraving represents a nearly smooth shell, the *Scrobicularia piperata* of modern writers. "Int." for "margine integerrimo" is added in the revised copy of the 'Systema.'

### *Venus pectinata.*

It requires a careful examination to separate the young of *Circe gibbia* from the more aberrant forms of *Circe pectinata*: far more difficult, if not wholly impracticable, does it prove to decide which of these two closely-allied species was, in each case, the original of the rude drawings referred to by our author. Were shape alone the criterion, the figures in Rumphius, and one, at least, (E) of Gualtier's might be ascribed to the former; the execrable engraving of Argenville to the latter; yet the equality and closeness of the ribbing as displayed in all but the last delineation, favours the supposition that they were intended for *pectinata*. Similarly the language of the 'Museum Ulricæ' is more suggestive of *gibbia* in the details of form and sculpture, of *pectinata* in respect to the colouring and lanceolated lunule. These two shells are likewise mingled together in the Linnean collection, where the *Circe divaricata* of Chemnitz (f. 316) is likewise present. The form of the latter, indeed, suits the "sublentiformi" of the diagnosis, but the expression "ramosa," as well as the details of the 'Museum Ulricæ' exclude it. "List. t. 312, 313" is added in the Linnean manuscript: both these figures are often quoted for *pectinata* proper, but the latter alone correctly represents it. Mörch, in one of his critical Sale-catalogues (Kierulf) pronounces its identity

with *gibbia*, but whether it may not be expedient, in a case of doubt like this, to accept the traditional identification (*Circe pectinata*, Encycl. Méth. Vers, pl. 271, f. 1) must be left to the judgment of my readers.

### *Venus scripta.*

Had the identification of this well-known shell depended upon the cited figures, our recognition would inevitably have proved erroneous or imaginative; for none of the engravings display those essentials that are demanded by the diagnosis. All the figures are very rude, and, with the exception of that in Gualtier, which exhibits a close, concentric striation, only resemble *scripta* in painting; none appear angulated at the extremity; those of Argenville and Rumphius are represented smooth-surfaced and suborbicular.

Thanks to the description in the 'Museum Ulricæ' naturalists have correctly divined the intended species. One specimen (Sow. Thes. Conch. vol. ii. pl. 139, f. 38) alone in the entire Linnean collection, the *Circe scripta* of Sowerby's Monograph, will agree with the description: hence, as our author has indicated his possession of the shell, no reasonable doubt of the typical authority of the example can be entertained. After "*impressio ani lanceolata*" the Linnean MS. adds "*ut vulvæ similis*": "*int.*" for "*marginem integerrimo*" is likewise appended.

### *Venus edentula.*

Not many years ago only a single edentulous *Lucina* was known which corresponded satisfactorily in other respects with the described features of this shell: hence, it was accepted generally as its representative. At the present period, when the annual increase on the number of described *Testacea* averages at least one-third of the total number determined in the age of Linnæus, the discovery and segregation of many toothless *Lucinæ*, by compelling a stricter interpretation of the

words of our author, renders the correct determination of *edentula* a task of no small difficulty.

The two principal claimants for the Linnean appellation are the richly-coloured West Indian species so named by Chemnitz and his followers, and the more homely-looking congener, which Reeve, who does not assent to the reasoning of Philippi, has named in honour of that illustrious naturalist. The principal arguments of the latter against the traditional appropriation of the name to the Chemnitzian species are, that it is a native of the West Indian, not the East Indian, seas, is richly tinted with orange internally, instead of being devoid of colour, and is not conspicuously wrinkled externally. To this it may be replied that the stated locality is simply "Indiis," not "Indiis Orientalibus" ("Indiis Occidentalibus" is never used by our author, at least in his *Vermes Testacea*; "India" and "O. Indico" seem to confine the habitat to the Asiatic seas, whilst "Indiis" may be either regarded as more indefinitely comprehensive, or even perchance as actually equivalent to "Indiis Occidentalibus"); that the absence of colour in the Linnean specimens is not to be wondered at, considering the worn and bleached condition of most of his shells; and that "rugosa" (wrinkled, which, indeed, both the *Lucinæ* are, though differing as to degree) is all that is affirmed of the Linnean species: moreover, *Philippiana* is not semitransparent, as demanded, and agrees not so well as to the lunule. Yet it must be recollected, that the colouring is almost too deep to become effaced by any ordinary degree of bleaching, and, if seen at all, was too remarkable to be passed over in silence; that Linnæus was not in the habit of noticing any but the more striking characters, and hence would not have used the term "rugosa," had not the wrinkles been decidedly coarse and conspicuous; moreover, that if he had meant the Chemnitzian shell, he would most likely have indicated the delineation of it in Lister (pl. 260). I shall not pretend to solve this knotty point; but merely observe that the original type must be sought for in the Upsala Museum, for, although the species was previously published in the tenth edition of the 'Systema,' it was not in his collection at the time (as appears from his lists). The specimen in his own cabinet which most nearly approaches the described features, and which possibly was

subsequently regarded by himself as the young of *edentula*, is an immature example of the *Lucina orum* of Reeve's Monograph (Conch. Icon. vol. vi. Luc. pl. 5, f. 21). The "rugosa" and the "Ani vestigium ovato-acutum valde excavatum angulo acuto" (M. U.) militate against the typical value of the example. The only manuscript addition is "int." for "margine integerrimo."

### *Venus literata.*

The *V. literata*, as it appeared in the tenth edition of the 'Systema,' was an easily recognisable species. Excluding from the synonyms all such shells as are opposed in character to the diagnosis, for instance, Bonanni's figure, called smooth in the text, and delineated as rounded at both ends, and the E and smaller F of Gualtier's plate, which seem intended for *textile*, a shell which is neither striated nor angulated, there remains a correct enough synonymy, which both harmonises with and further defines the too succinct description. Hence naturalists have easily recognised as the type of the species the *Tapes literata* (Knorr, Délices Yeux, pt. 1, pl. 6, f. 4), and the more readily so from the name itself being derived from Rumphius and Argenville, whose figures undeniably exhibit, however rudely, that well-known shell. The erroneous European locality probably originated from a belief that the *Tapes geographica* and *pullastra* were only its dwarf varieties. All the species here mentioned are to be found in the Linnean cabinet, but none (except *geographica*, which is queried for 124) were found written on or in a marked receptacle. "List. t. 402" is cited in the MS. of Linnæus; "Knorr, 1, t. 6, f. 4" in that of his son: both corroborate the established identification. "Int." for "margine integerrimo" is likewise appended.

### *Venus rotundata.*

The *Tapes (Venus) papilionacea* has been suggested as the representative of this species; an hypothesis negated by the

statement in the 'Museum Ulricæ' that the species is both smaller and smoother than *V. literata*. Our author, on the contrary, had intended to call that charming shell the *Venus meleagris*, as is evidenced by that name being written on an example of it in his collection. A marked specimen of the *V. rotundata* of Linnæus (*V. læta*, Poli, Test. Sicil. pl. 21, f. 2) is still preserved in his cabinet, possesses the required characteristics mentioned in the 'Systema,' and fairly enough agrees with the details in the 'Museum Ulricæ.' It is the *Tapes* (*Venus*) *læta* also of Philippi's 'Enumeratio Molluscorum Siciliæ' (not of Lin.), a very variable shell which has received many appellations from Lamarck (*florida*, *bicolor*, &c.). Since it was utterly impossible to identify the Linnean species, without having seen the type, the name *rotundata* has no claim to precedence.

### ***Venus decussata.***

From the locality "India," I had anticipated one of the several allied exotic species (Kämmer. Nachtr. Conch. Rudolst. pl. 3, f. 7, 8) delineated in Sowerby's admirable 'Thesaurus.' None such exist, however, in the Linnean collection; where, on the contrary, the *Tapes* (*Venus*) *decussata* of the Mediterranean (Chemn. Conch. Cab. vol. vii. pl. 43, f. 455, 456) is distinctly marked for this species. Judging from that circumstance, the reading was perhaps "anus minime retusus," not "anus minimus, retusus," as it stands in the 'Systema,' nor "anus minimus non retusus" as it appears in the 'Museum Ulricæ.'

### ***Venus virginea.***

The "pallide incarnata" being an unusual colouring for a *Venus*, has afforded a happy clue to the recognition of this delicately-tinted shell. The presence of *Tapes virginea* (Brown, Ill. Conch. G. B. pl. 37, f. 9) in the Linnean collection, where, with the exception of a flesh-coloured variety of the *V. rimularis* of Lamarck, it alone corresponds with the description in the

'Systema,' corroborates the ordinary identification; for where doubt exists it is expedient to prefer the established conclusion. The recorded locality, which, perhaps, resulted from the supposed identity of these essentially distinct forms, is not suited to our British shell: it is not, however, authenticated.

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## S P O N D Y L U S.

In our author's proposed new edition of his 'Systema,' the words "alterius truncata nate" were designed to have been inserted after the "Testa inæqualis, rigida" of the generic definition.

### *Spondylus Gædaropus.*

The number of species delineated in the several works originally referred to for the synonymy of this shell, and which alike answer to the too succinctly comprehensive definition of it in the 'Systema,' became still more augmented in the final edition of that work; for in the quoted plates of Seba nearly all the *Spondyli* may be found delineated. Should we search the pages of the 'Museum Ulricæ' for some limitation to the looseness of the meagre definition, we shall find that the engravings in the three illustrative works there mentioned do not harmonise with each other; even the account of the colouring ("varietate infinita ludens") and armature ("spinas varias—acutas aut planas") argues that our author included several shells, now held distinct, under one specific epithet. In this predicament, naturalists have reasonably given to the recorded locality the unwonted weight of a limiting characteristic, and, thus restricted, the sifted synonymy yields to us the Mediterranean *Spondylus* universally recognised as *Gædaropus* (Poli, Test. Sicil. vol. ii. pl. 21, f. 20, 21). That

species is present in the Linnean collection; but no specimens are marked. In the revised copy of the 'Systema,' "Acta Paris, 1766, p. 524, t. 14, f. 1" and "List. t. 206" are referred to, and the G is expunged from the published reference to Argenville.

### ***Spondylus regius.***

Linnæus did not himself possess this shell. In his revised copy of the 'Systema,' he has again transferred hither, from the preceding species, the reference to the letter G of Argenville's engraving (pl. 23), probably on account of the magnitude of the spines and the alleged large dimensions of the figured specimen. This was the original allocation of the synonym in the tenth edition of the 'Systema' and in the 'Museum Ulricæ.' Little, if any, light is thrown upon the species from the few words of Rumphius respecting the "*Ostreum echinatum maximum*" (No. 8).

The shell figured by Chemnitz (Conch. Cab. vol. vii. pl. 46, f. 471) for the *Spondylus regius* of Linnæus agrees most fairly with the language of the 'Museum Ulricæ,' and is almost universally accepted as a correct identification.

### ***Spondylus plicatus.***

The *Spondylus plicatus* of Linnæus is the acknowledged type of the genus *Plicatula*, yet from which of the members of that genus the description was originally drawn up is by no means determined. The West Indian species, being the more common, has usually been supposed to be its representative, an idea not borne out by critical examination. For the locality, which assumes importance, when not derived, as too usual, from the works referred to in the synonymy, and though subsidiary to the diagnosis, of use in further limiting a too briefly defined species, points out to us an Oriental shell ("Java"): the omission of reference, likewise, to the tolerably accurate figure of

the Jamaica *Plicatula* in Sloane's folio (so habitually cited by Linnæus) is not without significance.

There is no number 2 in the ninety-ninth plate of Gualtier : the interpolation of the letter E in the revised copy explains the error, the second figure E (the first one represents a true *Spondylus*) being a fair representation of a *Plicatula*. In both Gualtier and Rumphius, the folds are represented as simple (not ramose), and as tolerably numerous ("circiter plicis decem," M. U.), and this pictorial definition harmonises with the features of the shell still preserved in its marked box in the Linnean cabinet. This shell, which alone in the collection agrees with the definition of *plicatus*, seems a bleached example of the common Chinese *Plicatula*, figured for *imbricata* in the 'Thesaurus Conchyliorum' (vol. i. pl. 91, f. 15, 16).

In an interleaved copy of the tenth edition of the 'Systema,' our author has added the following details:—"Rudis, crassa, subimbricata, seu rugosa, longitudinaliter plicata, subæquivalvis, magnitudine extimi articuli pollicis; intus alba; cardo exacte congenerum."

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## C H A M A .

### *Chama cor.*

Of the shells present in the Linnean collection, the well-known *Isocardia cor* (Poli, Test. Sicil. vol. ii. pl. 23, f. 1, 2), in which I include the *I. Hibernica* of the 'Conchologia Iconica' as a variety, will alone agree with the direct and indirect definition of this species. In confirmation of this long-established identification, our author has cited "List. t. 275" in his manuscript, where also he has substituted "natibus revolutis" for "natibus recurvatis," and suppressed the "rima hiantæ." The published synonymy is correct, except the reference to Argen-



ville, and perhaps to Rumphius, in whose rude engraving the ventral margin has an undulated appearance.

### **Chama gigas.**

As our author had asserted his possession of this species, search was made, yet in vain, for a marked example. Two shells alone, however, in the entire collection will agree with the definition of the species; the *Tridacna squamosa* (exactly Chemn. Conch. Cab. vol. xi. f. 1997, 1998) and a very young uncharacteristic individual of a more elongated member of the same genus. No one can doubt, from the comprehensive synonymy and loose definition of the 'Systema,' that Linnæus regarded as mere varieties the several *Tridacnæ*, which naturalists of the present age justly consider to be entitled to a higher rank. To preserve the name, then, it is requisite to restrict the Linnean species to that which is described at large (and consequently more strictly limited) in the 'Museum Ulricæ.' The following expressions in that work merit our attention—"decussatim striata, obtuse plicata: plicis quinque convexis imbricatis: squamis rotundis fornicatis ascendentibus. Margo exterior repandus, parum admodum et obtuse lobatus. Color extus flavescens seu rufescens."—since the five obtusely-rounded folds, the reddish or yellowish colouring, the rounded and almost erect scales, the coarse decussation, apparent, not merely in the hollows, but even, though more delicately so, on the ribs themselves, form a combination of characters which is actually manifest in *squamosa* only. Upon that species, then, and not upon the one selected with doubt by Lamarck as the special type (an unfortunate choice, since it is characterised by him as being free from decussation in the hollows, "costarum interstitiis non striatis"), must the epithet *gigas* be bestowed.

### **Chama hippopus.**

The *Hippopus maculatus* (Chemn. Conch. Cab. vol. vii. pl. 50, f. 498, 499) alone of the shells in the Linnean cabinet will agree

with the definitions of this species. To the published synonymy, which is quite correct, "List. t. 350" is added, with reason, in our author's revised copy of his 'Systema.'

### *Chama antiquata.*

This species was briefly yet efficiently defined, in the tenth edition of the 'Systema,' by the citation of a single rude figure in Gualtier of *Cardita sulcata*, a shell which harmonises with the succinct diagnosis. Bonanni's figure of the same shell is also quoted in the 'Museum Ulricæ,' and the shell itself (Poli, Test. Sicil. vol. ii. pl. 23, f. 12, 13) is also present in the Linnean cabinet. Another somewhat allied species (the *Cardita bicolor*) may also be seen in the same drawer, and has erroneously been declared the *antiquata* of Linnæus from actual observation of his collection. So far, however, from being either marked as such, or deposited in a marked receptacle, the loose specimen is queried for *Chama cordata* on modern paper (not by Linnæus), and was probably introduced by Sir J. Smith.

The reference to Adanson in the 'Systema' must be suppressed; his engraving represents the *Cardita Ajar*, and was not cited until the twelfth edition. Not one of these three shells perfectly coincides with the language of the 'Museum Ulricæ.'

### *Chama trapezia.*

The *Cardita trapezia* (Chemn. Conch. Cab. vol. xi. pl. 204, f. 2005, 2006) of authors still remains in the box thus marked in the Linnean cabinet, and, unless we possibly except the young of the preceding shell, alone in the collection agrees with the definition. Linnæus has erroneously suspected this species to be "varietas prioris"; the young of that shell, however, does certainly exhibit much resemblance to *trapezia*.

The recorded locality is erroneous, the Mediterranean being the real birthplace of the species: no *Cardita*, that I know of, is found in Norway.

### *Chama semiorbiculata.*

The *Cardita phrenetica* (Chemn. Conch. Cab. vol. vii. pl. 50, f. 502, 503) has been suggested by Bruguière and Deshayes as the *Chama semiorbiculata* of Linnæus, and assuredly the description in the 'Museum Ulricæ' agrees most fairly with the characteristics of the shell. Of that species there is a specimen in the Linnean cabinet, which alone answers to the definition, yet, since it is not marked, and as our author has not asserted his possession of it, its mere presence adds but little weight to the accepted recognition.

### *Chama calyculata.*

The name *calyculata* suggests the idea of a cup-bearing shell, and the image of the *Cardita concamerata* is called up by the specific appellation. This conjecture, nevertheless, is not confirmed by the description, where no mention is made of any calyx-like appendage. Of the contents of the Linnean cabinet two species alone, the *Cardita calyculata* and the *C. variegata*, possess the requisite characters enumerated in the description. Of the former there are many specimens, of the latter only a single valve, which was not found with the other shells, but in a drawer of mixed specimens that are suspected to have once been the property of Linnæus. Both answer alike to the diagnosis, yet one alone can retain the name. The Mediterranean locality, coupled with the omission of all mention of the strongly marked variegation, favour the claims of the *C. calyculata* of Philippi (Reeve, Conch. Icon. vol. i. *Cardita*, pl. 1, f. 1). In the tenth edition of the 'Systema' the only engraving quoted was that of Gualtier, which fairly enough resembles the true *calyculata*; the reference to the figures of Adanson and Lister, which represent two different *Cardita* was erroneously appended at a subsequent period.

## *Chama cordata.*

Our author has not indicated his possession of this species, which has never been positively identified by any succeeding writer. Gmelin, however, although unable to determine the typical form, has referred, I know not wherefore, the *Cardita phrenetica* to it, as a variety. Schröter, who confesses that he knows not the shell, has translated the details in the ‘Museum Ulricæ’: in that book the characters are thus expressed:—  
 “Testa ferruginea seu flavescens, superne (non vero versus marginem tenuiorem seu exteriorem) sulcis distinctis transversis obtusis æqualibus. Angulus inter rimam et marginem exteriorem elongatus, magis fuscus lateribus angulatus. Rima exacte clausa cavitate ovato-lanceolata. Cardinis dens duplex compressus, retrorsum obliquus, exceptus a sinu.”

The specimen in the Dronningen Museum here described was noted from the first as the type of the species, and the example still preserved in that collection must be examined in order to ascertain the modern name of this puzzling shell. It is difficult to conjecture even the modern genus in which it must be allocated, but the expression “Rima exacte clausa cavitate ovato-lanceolata” renders it probable that there was no ligament; if so, the gradual evanescence of the concentric sulci towards the margin, the ferruginous colouring, the produced and angulated anterior\* extremity, and the lozenge with angulated sides, call up to one’s imagination a *Crassatella*, such a species as *Kingicola*. But this is mere surmise, though not wholly without foundation.

## *Chama satiata.*

This species is erased in our author’s revised copy of his work, with the remark “eadem 167” (*Arcinella*).

\* In the Linnean sense.

### *Chama oblonga.*

Although unaccompanied by any illustrative synonym, this species, thanks to the full description of it in the 'Museum Utricæ,' has been generally recognised in the *Cypricardia Guinaica* (Chemn. Conch. Cab. vol. vii. pl. 50, f. 504, 505), with which, indeed, it fairly agrees. The colouring, size and very delicate decussation there specified seem more in consonance with the characters of that shell than with those of the *Cypricardia* selected as its representative in the 'Conchologia Iconica.'

### *Chama Lazarus.*

M. Deshayes has justly remarked that the synonymy attached to this species leaves no doubt upon one's mind that it was not the *Lazarus* of Lamarck's 'Animaux,' but his *Damæcornis*. This conclusion is confirmed by the presence of that rare species (Born, Test. Cæs. Vind. pl. 5, f. 12) in the box thus inscribed in the Linnean cabinet. Although Argenville's figure F, as well as the 5 of Seba's plate referred to, remind one of the intended species, they are meant for *Spondyli*, and, together with the reference to Brown, must be expunged from any future synonymy.

### *Chama gryphoides.*

The name *gryphoides* is borrowed from Gualtier, who has used it generally for that group to which the name *Chama* is now restricted. The discordant array of almost irrerecognisable figures (for the most part of interiors and single valves) referred to by Linnæus evinces that he, also, would have included under this name all the regularly formed short-scaled veritable *Chamæ*. Among the more recognisable delineations, the *C. macerophylla* of Chemnitz (*C. Lazarus* of Lamarck) and the *Jataron* of Adanson (*C. Senegalensis?* of Reeve) may be particularised; the

former of which, apparently selected by Dillwyn as preeminently the *gryphoides* of Linnæus, was assuredly comprehended in it by our author, as the numerals 137 (its number in the tenth edition) on an example in his cabinet plainly demonstrate; yet this evidence is invalidated by the numerals 129 (*Lazarus* in ed. 10) upon another example of the same richly-coloured West Indian species. All the information therefore to be derived from the marked specimens is simply this, that Linnæus was in doubt whether to refer the *macerophylla* to *Lazarus* or to *gryphoides*, and that consequently the examples were not considered by him to be preeminently typical of either. This conclusion is strengthened by the locality authenticated by Brander, and the expressions “*valvulæ albæ—punctis muricatæ*,” which suit not the red or yellow tint and the laminated sculpture of *macerophylla*, but are truly applicable to that Mediterranean shell for which Lamarck, whose synonymy, however, is incorrect, and whose description of it is insufficient, has retained the appellation. Either this conclusion must be adopted, or, acting upon the principle that Linnæus has not truly defined either species, that one must be termed *gryphoides* which may first have been clearly separated from its congeners with that appellation.

### *Chama bicornis.*

The *Chama bicornis* of Linnæus, as Bruguière has sagaciously observed, was founded upon an erroneous impression that the two views of the same long-beaked valve delineated by Colonna, and copied by Klein and Lister, were representations of the twin valves of a bivalve shell. The characteristics of the species being imaginary and fallacious, the name must be suppressed. Some eroded single valves with greatly produced beaks, of either the Italian (*gryphoides* of Lamarck) or the common West Indian (*macerophylla* of Chemnitz) *Chama* appear to represent this shell in the Linnean cabinet.

## ***Chama arcinella.***

The *Chama arcinella* (Sowerby, Genera Shells, Chama f. 3) of authors is present in this collection, as declared by Linnæus, and alone agrees with the definition of the species. The term “sessili” is changed to “dentato” in the revised copy of the ‘Systema Naturæ.’

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## **A R C A .**

*Modiolus* and *pilosa* were the sole additions made in the twelfth edition to the *Arca* published in the previous one.

## ***Arca tortuosa.***

The *Arca tortuosa* (Reeve, Conch. Icon. Arca, pl. 13, f. 86) of most writers still remains in the box marked for this species in the Linnean cabinet. The synonymy and very peculiar aspect facilitated its early identification. “Latus superius læve est” is the manuscript addition of our author in his revised copy of the ‘Systema.’

## ***Arca Noæ.***

The Mediterranean *Arca Noæ* (Reeve, Conch. Icon. vol. ii. Arca, pl. 11, f. 72) is still preserved in the box thus marked in the Linnean cabinet, and alone of the shells present in the collection agrees with the definition.

In the revised copy of the 'Systema' the more modern style of numbering ("t. 368") of Lister's plate (copied from Bonanni) is substituted for the older and more tedious mode, and the reference to the letters I, G of Gualtier's engraving expunged, which leaves the synonymy tolerably correct. Bonanni, usually so inaccurate in his delineations, has represented the peculiar pattern of incised lines upon the ligamental area which distinguishes the European species from its nearly-allied congeners of Asia and America.

### *Arca barbata.*

In the marked receptacle of this shell in the Linnean cabinet is still to be found a specimen (Reeve, Conch. Icon. ii. *Arca*, pl. 13, f. 33) of the *Arca barbata* of recent writers, which correctly agrees with the description of the species.

Although, in the twelfth edition of the 'Systema,' the 'Museum Ulricæ' is referred to, there is no account of the species in that work; the *barbata* of the second edition (No. 2147, not 1147 as quoted) of the 'Fauna Suecica' is apparently the *Ark* called *nodulosa* by Loven. The figures in Seba and 'Mus. Tessin.' represent the *A. lacerata*, a rare shell which Linnæus did not distinguish from the common Mediterranean one.

### *Arca modiolus.*

In the marked receptacle of this species in the Linnean cabinet reposes the W. Indian *Modiola sulcata* (Chemn. Conch. Cab. vol. viii. pl. 84, f. 754), a shell which precisely answers to the required characteristics of the definition. Our author has added in manuscript "List. 366," an error probably for 365, in which plate his species is correctly delineated.



## **Arca pella.**

The words of the 'Systema' leave no doubt as to the modern genus (*Nucula*, section *Leda*) in which the *Arca pella* should be located, and the authenticated Mediterranean locality combined with the expression "oblique striata" so limits our selection, that the conclusion, as suggested by Philippi, of its identity with the Sicilian *N. fabula* (Sow. Conch. Ill. Nuc. f. 13) is almost inevitably arrived at. No shell in the Linnean cabinet exhibits the characteristics required for identification. In the earlier edition the words "ut testa fere rostrata, distincta utrinque fossula" intervene between "prominens" and "transverse striata."

## **Arca lactea.**

Despite the brevity of its description, and the absence of any auxiliary synonym, the *Arca lactea* has long been recognised by conchologists in the native species which bears that name in modern works (Brit. Moll. pl. 46, f. 1, 2, 3). Some bald bleached valves of that widely diffused European bivalve are present (as indicated) in the Linnean cabinet, and alone of the shells therein contained answer the requirements of the definition.

The authenticated locality could alone have enabled naturalists to determine the species.

## **Arca antiquata.**

The presence of a marked example, which agrees with its description, and still reposes in its marked receptacle in the Linnean cabinet, enables us to ascertain what species of *Ark* was regarded by our author as entitled to this designation. The type (which is recorded as possessed by our author from the first) reminds us strongly of Lister's 'Hist. Conch.' pl. 330,

which engraving, and not 236, as misprinted, was designed, as we learn from the correction in the revised copy of the 'Systema,' to have been quoted as illustrative. One cannot feel surprised at the great incorrectness of the synonymy (the reference to Gualtier excepted) attached to the description, since even now I know of no delineation which precisely exhibits the peculiar features of the shell in question: none assuredly are to be found in any of the works habitually consulted by Linnæus. Nevertheless, the cited figures of Rumphius, Sloane and Gualtier present as much general resemblance to the object intended as was then possible to be found: as to Bonanni, his figure is not recognisable, and Adanson's is scarcely more so. The *Arca* represented by Rumphius reminds one a little of *holosericea*, but is almost too rude for positive determination: Lister, t. 236, was clearly meant for *Deshayesii*, and, in all probability, so too was Sloane's rude drawing, judging from the locality and the English description which accompanies it: it bears, however, little resemblance to that well-known species. Gualtier's engraving is important; firstly, because it greatly resembles the type (it is scarcely elongated enough); secondly, because its ligamental area is perceptibly simple, and not scarified by rhomboidal incisures, as in the adjacent figure (B) of the same plate, to which it was preferred as a portraiture by Linnæus.

The original example, being much worn, was accompanied in the cabinet by a perfectly fresh-looking specimen that had possibly been introduced by Sir J. Smith, to further illustrate the species. The latter, the *Arca scapha* of Meuschen (Gronov. Zoop. p. 274, No. 1173, pl. 18, f. 13), and of Chemnitz (Conch. Cab. vol. vii. pl. 55, f. 584) was figured (pl. 1, f. 4) in this work, in the belief that it was identical with the marked individual, to which it was preferred as more characteristic. The type, however, having been subsequently pronounced by that eminent naturalist Mr. Cuming to be the *maculosa* of Reeve, it has been thought desirable to give an engraving of it likewise (pl. 4, f. 3).

As too frequently happens, a very different species, whose ligamental area, in place of being simple, is characterised by angular grooves, "*rhombeco plano striato ad angulum obtusum*," bears the same name in the 'Museum Ulricæ', where

the description, although tolerably ample, being at variance with the only recognisable figure of the two quoted (Gualtier, C, and Rumphius) does not adequately define the object intended.

The assigned localities, being merely taken from those attached to the misquoted figures of Lister and Adanson, are not to be depended upon.

### ***Arca senilis.***

This very peculiar-looking *Ark* was easily recognised, at an early period, from its synonymy and description. A marked specimen of it (Adanson, Senegal, pl. 18, f. 5) is still present in the Linnean cabinet. It is the *Arca senilis* of modern writers (Reeve, &c.) likewise, and is further illustrated, in the revised copy of the 'Systema,' by a reference to "List. t. 238."

### ***Arca granosa.***

This species first appeared in the tenth edition of the 'Systema,' with references to figures in Columna, Bonanni, Gualtier, and Argenville. The two former engravings are so ill executed as to be almost irreconisable. The first represents a crowdedly grooved fossil; the second a mere interior, which, intended possibly for *A. diluvii* (judging, at least, from the Italian locality) was probably only quoted from being cited for this species by Gualtier. Both the latter are decidedly meant for the *Arca granosa* of modern conchology, of which the characters are in accordance with the postulates of the diagnosis. The erroneous locality was derived from the statement of Bonanni, the reference to whose work is correctly expunged in the copy of the younger Linné, who has substituted "List. t. 242, f. 79." The *Arca granosa* (Chemn. Conch. Cab. vol. vii. pl. 56, f. 557) is still present in the collection (as indicated in the list) and alone of the shells therein contained agrees with the combined pictorial and descriptive definition.

Although Gualtier and Argenville alone are cited in the

‘Museum Ulricæ,’ the “altera testa minor” of that work leads us to infer that some inequivalve species must have been the original of that description.

### **Arca decussata.**

The example (Reeve, Conch. Icon. vol. i. Pect. f. 24) marked for this species in the Linnean cabinet is the *Pectunculus pennaceus* of Lamarck, who had queried the identity of his shell with the *Arca decussata*. The more ample description in the ‘Museum Ulricæ,’ where the somewhat puzzling “rima clausa” is explained by “nates parum retrorsum flexæ. Area interjecta clausa,” indicative probably of the peculiar absence of a ligamental excavation (area) at the end of the beaks, agrees very fairly with the features of the shell. Our author acted wisely in refraining from citing an illustrative figure, for at that period no recognisable delineation was published, and a reference to any approximating species would only have misled his readers.

### **Arca pallens.**

No additional particulars respecting this ambiguous species are recorded in the Linnean copy of the ‘Systema.’ Our author, moreover, did not himself possess the shell, but from the first referred (ed. 10) to the then unpublished ‘Museum Ulricæ’ for a detailed account of it. It is somewhat curious, then, to find a discrepancy between these two descriptions. The beaks, which in the ‘Systema’ are stated to be recurved, are declared in the ‘Museum’ “ad nullum latus obliquatæ.” Assuredly, however, the latter statement must be preferred, since the *pallens* of the ‘Systema’ is far too briefly characterised to be recognisable. All conchological writers agree in regarding it as a member of the modern *Pectunculus*, but the exact species seems still problematical. The shell suggested and delineated for it by Schröter (Einleit. Conch. vol. iii. pl. 9, f. 1), and usually accepted with that ready credence common to

the older writers, is not admitted as its analogue by the more original Bruguière, who at the same time acknowledges that he had never met with a specimen that precisely corresponded with its described features. The species designed by Schröter is by no means clear; indeed, no notice is taken of it in Reeve's Monograph of the *Pectunculi*. It is a beautifully streaked and clouded bivalve, which reminds us of *P. pennaceus*, *lineatus*, *glycimeris*, &c., with the arrangement of its teeth peculiarly arched, circumstances by no means suitable to the pallid shell, with almost transversely disposed teeth, specified in the 'Museum Ulricæ.' I should prefer, as a mere surmise, to suggest the possibility of the Linnean *A. pallens* proving identical with the *Pect. violascens*\* of the Mediterranean, yet the positive recognition of the species must be based upon an examination of the type in the Dronningen Museum.

### *Arca undata.*

The type of this shell is still preserved in the Linnean cabinet, marked with the numerals indicative of its identity with the *Arca undata*, and according with the published description of that species. It is an ill-preserved specimen of the *Pectunculus lineatus* (Reeve, Conch. Icon. vol. i. Pect. f. 25), with shape and surface so marvellously altered by attrition as to have rendered any descriptive portraiture (should fuller details have been attempted) a mere source of error: the name *undata* cannot then take precedence over the later appellation.

So closely do examples of *decussatus* resemble *lineatus* in general aspect, that one naturally feels surprised at the specific separation of such allied forms by our author. His sectional arrangement of the *Arcæ* by the position of their beaks, accounts, however, for the circumstance; since the former species falls into the division with recurved beaks, the latter becomes necessarily associated with such as have their beaks

\* Since writing the above paragraph, I find that Mörch, likewise, has arrived at a similar conclusion.

directly inflected. The contrast, indeed, between the sub-central station of the beaks in *lineatus*, and their oblique position at the extremity of the ligament in *decussatus*, is in fact the most striking distinctive feature. Bonanni's wretched drawing, which we discover from his words, rather than from his graver, to be intended for the European *glycimeris*, was only selected in default of any better representation being then extant.

The assigned locality (Jamaica) is apparently correct, the species being a native of the Antilles.

### ***Arca pectunculus.***

The Linnean cabinet contains a marked example (Crouch, *Introd. Conch.* pl. 8, f. 12) of this species, which, from the correctness of its synonymy and the ample details in the 'Museum Ulricæ,' has always been recognised by conchologists. It is the *Pectunculus pectiniformis* of more modern writers. In the revised copy of his 'Systema,' our author has substituted "t. 239, f. 73" for the more circuitous mode of citation required by the plates not having been numbered in the earlier copies of Lister's 'Historiæ.'

### ***Arca glycimeris.***

The name of this variable species was taken by our author from that applied to it (*Chama glycimeris*) in Lister's engraving, and since the common Guernsey shell there delineated answers the requirements of the specific diagnosis, and accords likewise with the assigned locality, the species is thus clearly and definitely established: a marked example (Turton, *Dithyra Brit.* pl. 12, f. 3) in the Linnean cabinet confirms the conclusion. Of the other figures mentioned in the synonymy of the tenth edition, that of Rumphius, although it exhibits somewhat the shape of this *Pectunculus*, does not even belong to the same genus; Gualtier, pl. 72, f. G (omitted altogether, not transferred to another species, in the twelfth edition) presents, indeed, the

general appearance and variegated painting of *glycimeris*, but is scarcely accurate enough for positive identification; pl. 82, C, D, of the same work, was possibly meant for *P. violascens*, yet, if so, is an execrable representation of it. The enlarged account of the species in the 'Museum Ulricæ,' where the colouring is described as "maculis flavescentibus fere fasciatis," is admitted to be confirmatory of the identification, and assuredly does not favour the supposition that either *P. violascens* or *P. Siculus* (the Lamarckian ideal of the Linnean species) was the original of it.

The additional engravings referred to in the synonymy of the twelfth edition are unworthy of being quoted, yet Bonanni, and Adanson (in his description) confirm the idea of the flammulated style of painting, which forms so special a feature in our indigenous species.

### **Arca pilosa.**

No doubt exists of the identity of this *Ark* with the *Pectunculus pilosus* of the Mediterranean, since the latter is clearly pointed out both by the description and by the cited engravings. Upon a magnificent example (fairly enough represented as to size, colouring and epidermis in Chemnitz, vol. vii. pl. 57, f. 565, yet slightly more orbicular in shape, as delineated in the Encyclopédie Méthodique, Vers, pl. 310, f. 2), of that shell, in the collection of our author, he has written "Bonan. recr. f. 80," and since that very figure was cited by Linnæus as illustrative, and as the name there mentioned "nux pilosa" was the origin of the specific appellation, the inscription may be fairly regarded as equivalent to the numerals 182 (the number of *A. pilosa* in the twelfth edition of the 'Systema,' where it first appeared in print).

Linnæus in his own copy has changed "pilosa" of the diagnosis into "limbo piloso": "excludi vult Soland. (er.)" is written in the copy of the younger Linné.

The difference between this and the preceding shell is now generally held to be of varietal rather than of specific importance. By those who hold this opinion the name *glycimeris*

must be preferred, since that species was constituted at an earlier period. M. Deshayes, however, thus distinguishes the two: *glycimeris*, he asserts, has its valves depressed, and its interior quite white; its ligamental area, moreover, is smaller and narrower, and its concentric striæ more conspicuous than in *pilosus*; the latter he characterises as having its valves more inflated and brown, with the longitudinal striæ upon them equally conspicuous with those which decussate them; the interior, besides, is stained with brown at the posterior extremity.

### *Arca nummaria.*

The box thus marked in the Linnean cabinet contains some young specimens of the *Pectunculus violascens* (Payraud. Moll. Cors. pl. 2, f. 1), which agree with the description and assigned locality of the *A. nummaria*. In his own copy of the 'Systema,' our author has written "Pet. Gaz. t. 52, f. 7," in which work is delineated a Mediterranean shell of the size and shape of the original examples.

The species, as it appeared in print, not being adequately defined, and the description being unsuitable to mature individuals, the name *nummaria* has no valid claim to precedence.

### *Arca nucleus.*

The definition of this shell is so utterly insufficient, that one wonders how ever its modern genus, and far more its species, could have been divined. Tradition points out the *Nucula nucleus* (Brit. Moll. pl. 47, f. 7, 8) for its representative, and this is confirmed in some measure by the reference "Pet. Gaz. t. 17, f. 9" (usually cited for *nucleus*, yet almost as like *radiata*, or *nitida*) added in the Linnean copy of the 'Systema.' There are a few worn, bleached, uncoated single valves of a *Nucula* (one of the three mentioned) in a paper marked *A. nucleus* in the Linnean collection, but the writing is not that of our



author, and the specimens, as I have reason to believe, were introduced subsequently to the arrival of the collection in England.

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## OSTREA.

It was the design of Linnæus, as we learn by his manuscript, to remove the four last members of the *Ostrea* from the rest, and to constitute for them a new and distinct genus. This group, equivalent to the Lamarckian *Perna* (not that of Retzius), is thus characterised and thus named in a copy of the 'Systema' which belonged to the younger Linné: "*Testa compressa, valvuli æqualiter plani, cardo cicatricibus pluribus transversis. Absque dentibus, sed divisa foveis transversalibus.*" The portion in italics was in a different handwriting from the rest.

The original markings upon the *Ostreæ* of the Linnean cabinet have been erased, and another set, to which I can discover no key (the numerals do not correspond with those in the arrangement of species suggested by the younger Linné) has been substituted. The collection, therefore, scarcely aids us at all in working out the members of this genus, a circumstance the more to be deplored from the acknowledged difficulty with regard to most of the *Pectens*, whose sculpture being wholly omitted, or very inadequately delineated by the older engravers, has rendered the synonymy of less value, from the impossibility of recognising what species the figures were designed for.

In certain cases the names are written upon the specimens with a pencil (*e. g.* upon *radula* and *ziczac*, the latter as "*vix Linnæi*"), but the handwriting cannot be confused with that of Linnæus, and was probably that of Sir J. Smith, whose habit, with the Linnæan herbarium, at least, was to use a pencil

only, to distinguish his own remarks from those of the great naturalist, whose collections he had purchased.

### ***Ostrea maxima.***

The *Pecten maximus* of authors (Donovan, Brit. Shells, vol. ii. pl. 49) is marked, both with name and numerals, for this shell in the Linnean cabinet. The species was early recognised from its synonymy and description, and appears to be identical in the 'Systema,' 'Museum Ulricæ' and the 'Fauna Suecica.' In the revised copy of the first-named work, the reference to Lister is corrected from 161 (there is no such shell-plate in the 'Historia,' but 163 follows 160) to 163. In his son's copy of the 'Systema,' "Pen. Zool. iv. t. 59, f. 61—Regenf. t. 2, f. 19—Bonan. Rec. 2, t. 8—Bonan. Kirch. 2, t. 7" are likewise referred to.

### ***Ostrea Jacobæa.***

This shell was early and easily recognised, thanks to the description in the 'Museum Ulricæ' and to the general correctness of the synonymy. The reference to Regenfuss, however, must be excepted, since his beautiful painting represents the preceding species, whose features do not answer to the described characteristics of *O. Jacobæa*.

A specimen of *Pecten Jacobæus* (Sowerby, Thes. Conch. vol. i. Pect. f. 107, 108, 158) still remains in the Linnean collection, and alone answers to the combined description and purified synonymy. The name was apparently taken from Bonanni, who says it is known as "Cappa di St. Giacomo."

### ***Ostrea ziczac.***

The 'Museum Ulricæ' was expressly referred to (prior to the publication of that work) upon the first appearance of this species in the earlier edition of the 'Systema.' Its type, or

original, must consequently be sought for in the Dronningen Museum, and not in the private collection of Linnæus, who did not possess it at that period.

The shell identified with it by authors (*Pecten zigzac*, Chemn. Conch. Cab. vol. vii. p. 277, pl. 60, f. 590, 591, 592) is present in the Linnean cabinet, where its eventual presence is indicated in the list accompanying the final edition of the 'Systema.' That shell does not at all correspond to the characters mentioned in the 'Museum,' where from eighteen to twenty, instead of about thirty, ribs are ascribed to the flat valve, &c., &c. What *Pecten* was really intended in that work I shall not conjecture, although the account is almost adequate enough to tempt one to do so.

### ***Ostrea striatula.***

Our author did not himself possess this species, but described it from a specimen in the Dronningen Museum, of which he has given us a fuller account in the 'Museum Ulricæ'; to this description he has referred, even before its publication. That a *Pecten* was intended is easily perceived; but the exact species has never been divined, scarcely indeed conjectured. No notice, indeed, is taken of it in the recent Monograph of this genus in the 'Conchologia Iconica': in the early one of the 'Thesaurus' it is enumerated among the undetermined species. Plate 170 of Lister's 'Historiæ Conchyliorum' is quoted as illustrative in the Linnean copy of the 'Systema,' but being, in all probability, only added from recollection of the type, not cited, as when the types existed in his own cabinet, from actual comparison with the original examples, is not of like importance with such synonyms. This engraving exhibits a *Pecten*, upon which Gmelin, who has constituted the species solely from this wretched figure, has bestowed the name *O. crenata*, but what species it was meant for it would be rash to surmise: assuredly it does not exhibit the characters alluded to in the description.

### ***Ostrea minuta.***

Our knowledge of this *Pecten* (no doubt exists as to the modern genus in which the species should be placed) is confined to the brief account of it in the 'Museum Ulricæ,' to which work Linnæus, who did not himself possess a specimen, has referred us even from the beginning. Judging from the description it was probably a young shell, and as the definition is so utterly inadequate that no writer has ever pretended to recognise it, the removal of the name from our catalogues is much to be wished for.

### ***Ostrea pleuronectes.***

The *Pecten pleuronectes* (Chemn. Conch. Cab. vol. vii. pl. 61, f. 595), of which a specimen still remains in the Linnean cabinet, and alone of its contents agrees with the definition, has been universally accepted for the species intended by our author, since all the four cited engravings are admitted to be designed for that abundant Chinese shell. "Hæc non plicata est" is the manuscript remark in the revised copy of the 'Systema.' The "radiis 12 duplicatis" is important for distinguishing the shell from its closely allied congener *Japonicus*.

### ***Ostrea radula.***

In the tenth edition of the 'Systema,' Rumphius, pl. 44, f. D, and its copy in Klein (pl. 9, f. 34) were inadvertently cited for a species ("radiis 12"), to which they bear no resemblance; the references were removed in the final edition to *Ostrea lima*, and the present citation substituted. The name *radula*, though appertaining properly to the former figures only, was still retained and appended falsely to the changed letters. In his own revised copy Linnæus has erased the

reference to B, which letter was not cited either in the 'Museum Ulricæ.' The description in that work coincides with the characters of the *Pecten* which, recognised generally as the representative of the species, bears its name in both modern and ancient publications. That shell (Knorr, *Délices*, pt. 5, pl. 9, f. 4) is present in the Linnean cabinet, but as its presence is not indicated in our author's list, it was probably added by his son, whose citation of "List. Conch. t. 175, f. 12 suprema.—Arg. t. 24 (= 27 of the edition cited by the father), f. D—Gualt. t. 74, f. L" favours the received opinion.

### **Ostrea plica.**

The *Pecten plicatus* of Chemnitz (*P. plica* of Lamarck) has been accepted generally as the representative of the Linnean species. The circumstance of a form (the variety *subplicata*) of this *Pecten* being present in the Linnean cabinet confirms, in some measure, the traditional determination, which it is not expedient, perchance, to disturb. The description, however, is inadequate, for even the details of the 'Museum Ulricæ' with the peculiarities of the hinge will apply to more species than one;\* and the illustrative engravings, though usually cited for *Pecten plicatus* are somewhat doubtful representations of it: Argenville's figure, indeed, is more like the *P. undulatus* of Sowerby's Monograph (Thes. Conch. vol. i. pl. 19, f. 205).

"Auriculis æqualibus" is added in the revised copy of the 'Systema,' and "striatis" substituted for "decussato-striata."

### **Ostrea pallium.**

The *Pecten pallium* (Sow. Thes. Conch. vol. i. Pect. f. 167) of authors is preserved in the box marked for this species in the Linnean cabinet. In the revised copy of the 'Systema' the letter C has been erased from the reference to Rumphius, and

\* To *P. Danicus*, for instance, of which there are examples in the collection.

the synonymy thus purified becomes correct. With such a figure as that of Regenfuss it would have been very improbable that the "*Ducal mantle*" should have escaped recognition: Argenville's drawing, however, is decidedly inaccurate, but his description establishes the correctness of the synonym. The 'Museum Ulricæ' dwells more upon the peculiarities of the auricles than of the sculpture.

### ***Ostrea nodosa.***

The description and correct synonymy of the 'Museum Ulricæ' (where Rumphius, Argenville and Gualtier alone are quoted) leave no doubt of the identity of this shell with the *Pecten nodosus* of authors, a specimen of which (Chemn. Conch. vol. vii. f. 609) is present in the Linnean cabinet, and alone agrees with the definition. The reference to Bonanni has been justly erased in the manuscript of the younger Linné. "List. t. 186" has been added to the references in the revised copy of the 'Systema': the figure cited is scarcely orbicular enough, but agrees in other respects with the essential features.

### ***Ostrea pes-felis.***

No cited engraving threw light upon this doubtful species; hence the determination of it has proved a serious difficulty. In the tenth edition of the 'Systema' the rays or ribs are stated in the diagnosis to be "7"; in the particulars after the habitat, "novem radiis sensim undata" is appended: this apparent discrepancy (a misprint, I suspect) seems reconciled in the species selected by Chemnitz (f. 612) for its representative, where the ribs range in number (as he declares) from seven to nine. Specimens of that shell\* (Chemn. Conch. Cab. vol. vii. fig. 613), a by no means common one, whose reputed habitat agrees with the locality mentioned by our author, are still preserved in the

\* It is the *Pecten pes-felis* of Sowerby's Monograph also, but the colouring of his figure is unlike the painting of those in the cabinet.

Linnean cabinet, and alone of its contents agree with the original diagnosis. The worst (and probably the first) example has only seven distinct rays, the majority have eight: the difference of the auricles in magnitude is very striking.

From the details enumerated in the 'Museum Ulricæ,' more especially "auriculæ subæquales," which is opposed to the "auricula altera minuta" of the 'Systema,' I can scarcely doubt that the *Pecten* there described was different.

In the twelfth edition of the 'Systema,' "inæquivalvi" was erroneously added to the diagnosis, and the numeral 9 replaces 7. In the revised copy, the obnoxious "in" has been obliterated from "inæquivalvi" and "plicata, utrinque striata" substituted for "sensim undata."

It is better, on the whole, in citing the *pes-felis* of Linnæus as a synonym of the *Pecten* thus designated, to confine the reference to the tenth edition, for assuredly the "inæquivalvi" of the twelfth edition (though perhaps only a typographical error) forbids our referring to that likewise.

### ***Ostrea pellucens.***

The cited engraving of Argenville is a tolerable representation of *Pecten varius*, and is correctly delineated as having very numerous ribs, instead of the nine only allowed it in the diagnosis: it is plainly an erroneous citation. Few conchological writers have hazarded the determination of this *Pecten* (the genus is certain enough); Dillwyn, however, ventured to opine that it might be identical with *P. ornatus* of Lamarck: the rough and very numerous raised striæ of that shell do not, however, correspond to the "radiis novem, lævi" of the description.

Linnæus did not himself possess an example (as we learn from his list) when he originally founded the species: I can find nothing in his cabinet, which answer to the details of the 'Museum Ulricæ.' The account of the species in that work does not ill apply to the *Pecten imbricatus*; the spoon-shaped hemispherical scales, however, are more marked in the "oper-

culum" (the flatter valve) than in the "fornix" (the more convex one).

Practically, the *pellucens* may be said to be erased from our catalogues, for no further notice is taken of it in the recent Monographs of the genus *Pecten* than to enumerate it among the undetermined species.

### ***Ostrea obliterata.***

The *Pecten* recognised by conchologists for this species is the *P. obliteratus* of Sowerby's Monograph (Knorr, Délices, pt. 5, pl. 21, f. 6). It was determined chiefly by the details communicated in the 'Museum Ulricæ,' and the indicated affinity with *pleuronectes*. Gualtier's figure is very rude, but is usually quoted for the species. Our author did not himself possess it.

### ***Ostrea sanguinea.***

Gualtier, in the cited engraving, has delineated a *Pecten*, but so rudely that the species cannot possibly be determined: neither, indeed, do the details of the 'Museum Ulricæ' suffice for the recognition of a member of so populous a genus as *Pecten*. The "semiaurita" of the diagnosis is a somewhat enigmatical expression, and might either mean having ears on one side (yet scarcely so, for our author uses "uniaurita" for that peculiarity), or having small-sized auricles: the "auriculæ pares," added in the revised copy, would indicate the latter meaning.

Of the shells in the Linnean cabinet, the *Pecten senator* (Chemn. Conch. Cab. pl. 65, f. 617, not well) agrees, by far, the best with the definition, and as the type of *O. sanguinea* is stated to be present in the Linnean collection, there is every reason for believing it was that species which was actually intended. Nevertheless, the substitution of the earlier appellation for the clearly characterised *senator* is scarcely to be urged, for unless the term "semiaurita" should be understood



as equivalent to "inæquiaurita," it would be incorrectly applied to that species.

### **Ostrea varia.**

The *Pecten varius* (Sow. Thes. vol. i. Pect. f. 214) has universally been accepted as the representative of this species, and with great probability, since it perfectly agrees with all the features specified in the description. The locality, however, is erroneous, and the cited figure, though suggestive of its features, and even possibly designed for it, very rude. The reference to "Argen. Conch. t. 27 (= 24 of the earlier edition), f. H," and "Penn. Zool. iv. t. 61, f. 64" in the manuscript of the younger Linné, supports the received opinion. "Scabrities echinata e squamis fornicatis" has been written by our author in his own copy of the 'Systema'

*Pecten varius* (Donov. Brit. Shells, vol. i. pl. 1, f. 1) occupies the box marked for the species in the Linnean cabinet.

### **Ostrea pusio.**

I cannot find a specimen in the entire collection of our author which perfectly coincides with the details given in the 'Museum Ulricæ.' The marked receptacle of the species in the Linnean cabinet has unfortunately been converted into a general depository for all the loose valves of the smaller *Pectens* (to which genus the *pusio* undoubtedly belongs), and the descriptions, without perfectly agreeing with either, would equally apply to two shells present, the *pusio* of the British writers and the *albolineatus* of Sowerby's Monograph. The "color operculi albus striis nigris venisque albis undatis" is peculiarly suitable to the latter; but by no means appropriate for the former, neither, indeed, is "auricula altera maxime obsoleta": the lower valve, however, is not "albus." In the same box reposes a white valve of the young *Islandicus*, and it is not impossible that our author, scarcely any of whose *Pectens* are in pairs, may have imagined that it appertained to the more richly coloured superior valve. In that case the description of Linnæus would

have agreed admirably with this factitious compound; no natural known shell seems perfectly to answer to the specified requirements. Upon the whole, however, the *P. sinuosus* (= *pusio*) of authors (of which there are many loose specimens in the cabinet) accords the best with the definition, and Turton, Donovan and other British writers argue, with much probability, that the two are identical. Perhaps it is better, however, in the absence of any positive proof of their identity, to refer it to that species with a qualifying "probably" appended.

Linnæus in his manuscript has modified the expression "auricula fere unica" into "auricula altera minuta."

The *P. pusio* of Lamareck, with "radiis trigesimis" is said by Deshayes to be a depauperated *varius*; it could not well be the *O. pusio* with "radiis 40." Chemnitz and Schröter have erroneously considered a Nicobar shell (Chemn. Conch. Cab. f. 635) to be a variety of our European one.

### ***Ostrea glabra.***

The *Pecten glaber* (Sow. Thesaur. vol. i. p. 58, pl. 18, f. 169 to 176) has been generally accepted as the representative of this species: this recognition is confirmed by the presence of many varieties of that beautiful shell in the Linnean cabinet, where they alone, of the several allied species present, agree with the definition. The specimen delineated by Regenfuss in his second plate not being in accordance with the description of *glaber*, the "t. 2, f. 16" is rightly erased, as a synonym, by the younger Linné: his other figure (pl. 1, f. 10) is not so unlike the yellow variety. Gualtier's delineation is far from a good one, yet conveys a general idea of the appearance of the species.

### ***Ostrea opercularis.***

The *Pecten opercularis* (Donov. Brit. Shells, vol. i. pl. 12) still reposes in the box marked for this species in the Linnean cabinet. "Penn. Zool. iv. t. 60, f. 63—List. Conch. t. 190,

f. 27; t. 191, f. 28; t. 192, f. 29—List. Ang. t. 5, f. 30—Gualt. Test. t. 73, f. 9" are added for a synonymy by the younger Linné, and support the received opinion. The species was apparently determined from the details of the 'Museum Ulricæ,' which, at a time when few of the genus *Pecten* graced the cabinets of the curious, were sufficiently antagonistic to the features of the other known *Pectens* to cause its ready determination.

The name *opercularis* originated from an erroneous belief that the paler valve of a *Pecten* was necessarily the lower, and, as the richer coloured valve was more convex than the other, it was doubtlessly to draw attention to the circumstance that the appellation was bestowed.

"Scabrities constat squamis imbricatis minoribus *O. palli*, sed radii plures" has been written by our author in his own copy of the 'Systema.'

### ***Ostrea gibba.***

Linnæus has not included this species in the list of those possessed by himself: there is, however, a single distorted valve in the cabinet that is precisely like the one figured in the cited engraving of Browne's "Jamaica."

The remarkably swollen form of both valves has rendered its identification as the *Pecten* thus named by Sowerby (Sow. Thes. Conch. vol. i. pl. 12, f. 1) and others to be very generally approved of. The "interstitiis angustissimis," however, of the 'Museum Ulricæ' is rather opposed to the received identification. The younger Linné has quoted "Gualt. t. 273, f. D, L" and "Regenf. t. 2, f. 16" in illustration of this species.

### ***Ostrea flavicans.***

Before the publication of the 'Museum Ulricæ' that work was referred to for a description of this obscure species. The type or original, then, was in all probability in the Royal collection; assuredly nothing in the Linnean cabinet answers

to the peculiar features of the *O. flavicans*. In the earlier list of his shells our author has enumerated this species; in a later one it has been written and then erased. Its position in that section, which forms the modern *Lima* might induce the idea of its having belonged to that genus; but the bright hues of its asserted colouring forbid the supposition. It was probably a *Pecten*, but I find no notice of it in any work; and have not myself observed a shell which positively combines the stated peculiarity of shape (perhaps only accidental) with the other characters enumerated in the 'Museum.'

Perhaps the *Pecten tigris* of Lamarek comes nearest to the ideal of the species; its comparative flatness does not, indeed, answer, to our modern notion of the word gibbous, but Linnæus uses the same expression for *O. fasciata* where the valves are declared to be "parum convexæ": he probably referred merely to the distorted look produced by the projecting obliquity of the ventral edge ("altero latere magis gibbis").

### ***Ostrea fasciata.***

If we derive our notion of this shell from Gualtier's figure, we must regard it as a *Pecten*, but that engraving does not answer to the "auriculis exoletis" of the definition. Although the figure E conspicuously displays three dark bands, from which circumstance the name was, in all probability, bestowed, it is generally believed that Linnæus intended to indicate the *Lima* which is delineated on the same plate as E E. The omitted E is supplied by our author in his revised copy of the tenth edition, which in some measure confirms the received opinion.

The shell described in the 'Museum Ulricæ' seems decidedly to belong to the genus *Lima*, but not to the species (*tenera*?) delineated by Gualtier: and as the account in the earlier work is utterly inadequate to insure identification, the specimen in that 'Museum' must be regarded as the typical one. From the paucity of details it is somewhat difficult to ascertain what is the modern name of the object described. Chemnitz having with great doubt (an uncertainty equally felt by Dillwyn) sur-

mised that it might be perchance identical with his *Pecten inflatus*; succeeding writers have reiterated the hypothetical recognition, with still less hesitation. In Sowerby's Monograph of *Lima* the statement is repeated, and the existence of a specimen in the Linnean collection is mentioned in confirmation. But our author has not mentioned the species in either catalogue of the contents of his cabinet, and the example present, one of those that were incautiously mixed with the original types, was collected by Lord Valentia, as is evidenced by his name written in the interior: moreover, as Chemnitz remarks, the *inflata* is ventricose, a directly opposed feature to the "valvulæ—parum convexæ" (M. U.) of *fasciata*, and the "striis scabris 30 et pluribus" of that shell by no means in harmony with the expression "radii 20" (M. U.). This determination cannot, therefore, be assented to.

Born has likewise selected, for the *O. fasciata*, a *Lima*, which seems to agree much better, having only twenty rays; the valves, however, are called convex, and, judging from the figure, are very decidedly so: his engraving does not correspond to any in the late Monograph by Sowerby, nor precisely with any specimen I have myself examined.

Of the *Limæ* delineated in the 'Thesaurus' that termed *fragilis* approaches nearest to the ideal I should form of the Linnean shell; but, under all circumstances, it is better, unless the type in the Dronningen Museum should be still preserved, and prove an unknown species, to expunge this imperfectly defined *Ostrea* from our catalogues, or cite it with a "probably" attached, for the species thus designated in Born's 'Testacea.'

Even the younger Linné could not ascertain what bivalve was intended by his father, but has referred it, with a note of interrogation appended, to a shell described by a later writer.

## Ostrea Lima.

In the box thus marked in the Linnean cabinet is still preserved the *Lima squamosa* of authors (Sow. Thes. Conch. vol. i. Lima, f. 1). All the figures cited by Linnæus are usually

ascribed to that species; its recognition, consequently, was an easy task. “Radii tantum singulari ordine squamis fornicatis” has been written in the revised copy of the ‘Systema.’

### ***Ostrea malleus.***

The *Malleus vulgaris* (Chemn. Conch. Cab. vol. viii. pl. 70, f. 655) remains in the Linnean cabinet, and alone agrees with the several descriptions of this species. Naturalists could not fail to identify the shell intended by Linneus, since the very remarkable shape is confined to two or three known recent shells, and of these *M. vulgaris* alone agrees with the colouring indicated in the ‘Museum Ulricæ.’ The circuitous mode of referring to Lister, is modernised into “t. 219” in the manuscript of the younger Linné.

The following addition to his description was written by our author in his interleaved copy of the earlier edition of the ‘Systema:’ — “Testa rudis, nigra, oblonga, linearis, tunc flexuosa, lobi laterales transversi, subulati: cardo hians lacuna, cujus medio fossula transversa cartilag(ine) parva.”

### ***Ostrea diluviana.***

The marked type of this species in the Linnean cabinet proves to be the shell so denominated by Hisinger, Lamarck and D’Orbigny (Pal. Fr. 480). The French obtain it from the Lower Chalk formation (Sharpe MS.). The specimen agrees with the description. In the revised copy of the ‘Systema’ our author has referred us to “List. t. 486,” a drawing which reminds one somewhat of the example, but which not being intended for the species (it is referred to *O. carinata* by Dillwyn) was probably quoted as the nearest approach to it then extant.

## ***Ostrea folium.***

The *Ostrea folium* of Chemnitz (Conch. Cab. vol. vii. pl. 71, f. 662 to 666) has generally, and apparently with justice, been accepted as the representative of the Linnean species. Our author, who did not himself possess the shell, has, in his own copy of the 'Systema,' by changing "Re" to "Ar," corrected the erroneous reference to Regenfuss in his twelfth edition: naturalists, however, have not been misled by the typographical blunder, from the circumstance that twelve plates only by Regenfuss have ever been published. Klein's engraving was copied from Rumphius.

## ***Ostrea orbicularis.***

Our author did not possess this species, the characters of which one could almost fancy were drawn up solely from Gualtier's figure. Assuredly they are utterly inadequate to ensure an identification of the species: hence no writer has yet succeeded in determining it: Chemnitz thought it was the shell he has delineated in plate 74, figure 680 of his 'Conchylien Cabinet,' but that oyster, which I should conceive to be a mere variety of his *O. plicata*, has such evident folds that even Gualtier and Schröter, no severe critics, have queried its identity with the Linnean *orbicularis*. Some *Ostreæ* of my own cabinet, which I have every reason to believe else undescribed, taken from an *Avicula* supposed to inhabit the Red Sea (it was collected by Lord Valentia) correspond remarkably well with Gualtier's figure. When adult, (these specimens are immature) it varies greatly in figure, often, indeed, it becomes elongated, but has invariably a brilliant green (not iridescent) interior, and scabrous granules (like those of *frons*) surrounding the margin of the superior valve. Had that shell been suggested by any previous writer as the representative of the Linnean species, I should have assented to the reasonableness of his recognition, as a probability: under existing circumstances, I feel, with Dillwyn, that the *Ostrea orbicularis* must ever be

included among the doubtful species of our author. For how can any member of a genus so polymorphous as *Ostrea*, be indisputably determined from a most meagre description and uncharacteristic figures.

### *Ostrea edulis.*

The *Ostrea edulis* of authors (Sow. Genera Shells, Ost. f. 1) is marked for this species in the Linnean cabinet. Being indicated by Linnæus as the edible oyster of Europe, it was of course immediately recognised, yet scarcely any characteristic representation of it occurs in the works of the older writers. Klein's engraving is copied from Lister (194, f. 31, not quoted): the reference to Lister should have been 193, f. 30 (not 20). The figures in both of Lister's works are known to be designed for our British species, and Gualtier's delineation is not unlike it: Ginnani's drawing is decidedly suggestive of our common rock oyster, but that the Adriatic species is really identical with ours I hesitate to affirm. The engraving of Bonanni is too bad for positive identification: those of Rondelet, &c., are execrable.

### *Ostrea semiaurita.*

Even the modern genus in which this species should be located is a subject of discussion. The shell which Chemnitz has figured for it (Conch. Cab. vol. vii. f. 579) is the *Perna radiata* of Anton (*P. vulsellæ* var. of Lamarck): Schröter and Gmelin suggest a *Crenatula (avicularis?)*: Deshayes more logically argues for *Meleagrina*.

The species is pictorially defined in the tenth edition of the 'Systema,' since the cited figure of Gualtier, which accords with the description, is a decided *Meleagrina*; and, although the little study hitherto bestowed upon that interesting group prevents me from naming it, is apparently a recognisable shell.\*

\* Gualtier, for want of a glass, has reversed the valves. His figure closely resembles a most variable Jamaica species distributed by the late Professor Adams as *Avicula (Mel.) crocata*.



A change perchance occurred in the 'Museum Ulricæ,' where the same engraving is again referred to, yet the details mentioned do not precisely agree with the language of Gualtier, whose "ex fusco viridescens" does not exactly harmonise with the "flavo-testacea" of our author: colour, however, is often a varietal distinction only. The byssal aperture is somewhat awkwardly described; yet the meaning is intelligible from the language used for the same part in the account of *O. margaritifera*, and from the cited engraving.

When Linnæus at first described the species, he did not himself possess it: in the interleaved copy of his twelfth edition, which he was revising for a thirteenth edition, its presence in his private cabinet is asserted. I fear, however, from the "cardo ut sequentibus" of his manuscript that he had forgotten his own borrowed type. It was possibly from having read the Linnean manuscript that Solander considered *semi-aurita* to be a mere variety of the succeeding *Perna*: Gronovius most unreasonably has cited Seba's delineations of some forms of *P. isognomon* in illustration of the Linnean species.

I find no specimen in the collection marked for the species, nor do I observe any either that strictly answers to the requirements of the definition. The nearest approach to the ideal of the 'Museum Ulricæ' seems the *Perna sulcata*; but the "lævi" is opposed to such an identification. There is likewise a beautiful little *Avicula* intermediate in aspect between the *Mytilus ala-corvi* (suggested by Mörch for *O. semiaurita*) and *meleagridis* of Chemnitz, that is not so unlike the few words of the 'Systema,' and the figure\* in Gualtier.

### **Ostrea perna.**

This species, which only appeared in the twelfth edition of the 'Systema,' was eventually designed by Linnæus, as the "gen. nov." of his revised copy of that work manifests, to have constituted a new genus along with the last and the succeeding

\* In the Vienna reprint of the twelfth edition, the 84 was erroneously misprinted 48.

two shells. The description of its hinge demonstrates that it belongs to the genus *Perna* (as now understood), and the “colore ligni putridi seu ferruginea” is very expressive of the colouring of *P. sulcata*. Of this species a specimen, which is preserved in the Linnean cabinet, is here portrayed (pl. 2, f. 7), not as positively the shell intended by our author (with whose description, however, it agrees), but partly because I know of no characteristic delineation of it, partly because it is highly probable that such was really the object he wished to define.

### ***Ostrea isognomon.***

Linnæus had not this *Perna*, over whose name he has written “gen. nov.” in his revised copy (the proposed thirteenth edition) of the ‘Systema.’ The language of the ‘Museum Ulricæ’ respecting it leaves no doubt of its identity with the *P. isognomon* (Chemn. Conch. Cab. vol. vii. pl. 59, f. 584) of authors. The synonymy is essentially correct, but includes those forms which Lamarek has separated from *isognomon* as *P. femoralis* and *canina*. In the reference to Rumphius in the twelfth edition the 1 is a typographical error for I., which stood there both in the preceding edition and in the ‘Museum Ulricæ.’

### ***Ostrea cyphippium.***

Linnæus has not inserted the name of this species in the list of the shells possessed by himself. Although the figure in Rumphius is irreconisable (it exhibited, however, the required form), the description in the ‘Museum Ulricæ’ has enabled conchologists to identify this *Perna* with facility (Chemn. Conch. Cab. vol. vii. pl. 58, f. 576). Even the brief definition of it in the ‘Systema’ would have sufficed for its determination, since the account of its hinge proved it was a *Perna*, and the expressions “orbiculata,” “rudis fusca” were formally applicable to but one known species of that genus. “Gen. nov.” has been written by Linnæus, in his own copy, over the name

*ephippium*, and "List. 227" (the interior of an allied form, at the least) has been added to the synonyms.

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## A N O M I A .

### *Anomia craniolaris.*

Since Linnæus has recorded his possession of this fossil, and since one species (Hæning. Monog. Crania, f. 5) alone in his entire collection will agree with the published description, there can be no doubt of its typical authority. It proves, as was surmised by Hæninghaus and Deshayes, to be the fossil *Crania nummulus*, and not, as was imagined by Lamarck and the majority of writers, a recent *brachiopode*. Nevertheless, had our author lived, he would certainly have confused that species with it in his intended new edition, for he has written "In mari Mediterraneo supra corallia vivit (?) cranioli figura, inferius adhærens." The "nondum viva reperta," however, sufficiently distinguishes the published species.

### *Anomia pectinata.*

Only one fossil species in the Linnean collection, and that is the one still preserved in the box thus marked in the cabinet, answers to the description of this shell. Since the species is recorded as having been in the possession of our author, no reasonable doubt of the typical value of the examples can be entertained. Mr. Sharpe, who has carefully examined them, has communicated the following synonymy and remarks:—

"*Anomites costatus*. Wahlenberg, Act. Soc. Ups. vol. viii. pl. 4, f. 12 to 14.

"*Terebratula costata*. Nilsson, Petref. Suec. pl. 3, f. 13; Dalman, Vet. Acad. Handl. 1827, p. 136; Hisinger, Lethæa Suecica, pl. 22, f. 8.

"The Swedish naturalists consider their *T. costata* identical with the *T. lyra* of the 'Mineral Conchology' (pl. 138), from which the Linnean specimens differ materially; the ribs on both valves are stronger and sharper in the *T. pectinata* than in *T. lyra*, and the concentric ridges are also more marked. The larger valve being broken in all the specimens, we cannot compare the form of the beak, but in the smaller valve, which is perfect, there is a marked difference in greater flatness, and in the straightness of the hinge-line, which in one example is produced into an angle on one side. Both species are variable in general form and in the ribbing.

"The cardinal apophysis on the smaller valve of this species is very peculiar, being perforated by two pores, which probably allowed of the passage of a pair of ligaments, which appear to have run through the side pores of the beak of the larger valve: the beak of the larger valve of *T. lyra* has these pores, and this species has probably the same; that is, a pore on each side of the perforation, which is general in the genus.

"Nilsson states that all the Swedish specimens he has seen have the large valve broken in the manner we find Linnæus's specimen imperfect. The species is common in the chalk formation of Sweden. Nilsson quotes the *T. lyra* as a synonym with some doubt: Hisinger gives it as certain."

Messrs. Davidson and Salter, likewise, have recognised the specimens as *T. costata*.

### ***Anomia ephippium.***

The *Anomia ephippium* of authors (Mawe, Conch. pl. 15, f. 6) remains in the box thus marked in the Linnean cabinet. The synonymy being correct, and the shell abundant, the species was readily determined from the first. As both America and the Mediterranean are assigned as localities, and the American form is considered by some conchologists as a distinct species, it is as well to remark that the shells delineated by Bonanni

and Ginanni are said by them to be European (from the Adriatic); Argenville is, as usual, silent on that point.

### *Anomia cepa.*

Imperforated valves of the *Anomia cepa* (Chemn. Conch. Cab. vol. viii. pl. 76, f. 694) of most conchological writers are present in the box thus marked in the Linnean cabinet. Our author has likewise added "List. t. 204" in his revised copy of the 'Systema,' a circumstance which confirms the received opinion.

### *Anomia electrica.*

In the box thus marked in the Linnean cabinet may be found examples of the *Anomia electrica* of authors (Chemn. Conch. Cab. vol. viii. pl. 76, f. 691), a variety of *ephippium*, which alone of the *Anomiæ* of the collection accords with the description of the species. These specimens, which thus confirm the received opinion, do not appear to differ from those ordinarily taken upon the coast of this island.

"Valvula plana perforata basi, sed foramine postice hiante." was the intended addition to its brief description in the 'Systema.'

### *Anomia squamula.*

Our author possessed this species, of which specimens (Turt. Dithyra Britan. pl. 18, f. 6) are still preserved in the Linnean cabinet that alone, of those present in the collection, suit the requirements of the description. They are the *Anomiæ* usually (and, we perceive, correctly,) regarded as the *squamula* of Linnaeus, yet are assuredly only the fry of *A. ephippium*. An idea somewhat analogous to this was entertained by the founder of the name himself, who thus surmises, in his own copy, his doubts of its specific individuality: "Hæ tres, *cepa*, *electricæ*, *squamula*, an varietates."

## **Anomia Patelliformis.**

This species, more largely described by Linnæus in the second edition of the 'Fauna Suecica,' is likewise delineated and fully characterised by him in the first volume of the 'Upsala Transactions' (1773, pl. 5, f. 6, 7). From the language of the 'Fauna' I should have thought it the *Anomia striata* of Lovén, from the figure and the expression "strigæ numerosæ distantes convexæ" of the 'Acta,' the *A. undulata* of authors, which identification is that accepted by Lovén; both, however, are said by no mean authority (Gray) to be identical.

Specimens of *undulata* (Chemn. Conch. Cab. vol. viii. pl. 77, f. 699), moreover, are wrapped up in a paper thus labelled in the Linnean Cabinet, into which, however, they were only introduced by the younger Linné, who has declared his possession of the species. His father has not enumerated it among those recorded as belonging to himself.

## **Anomia scobinata.**

Four features only are mentioned in the description of this shell; the two latter are generic, and the two former do not answer to the characters of the shell delineated by Gualtier. It was impossible for naturalists to determine the species from such a definition; hence Lamarck, Deshayes, and other modern writers have wisely consigned it to its merited oblivion. Chemnitz, more venturesome, has figured for it a *Terebratula* (the genus is not doubtful), but his shell (whatever it may have been meant for (designed perhaps for *T. truncata*) so far from being "lævi," is conspicuously ribbed: even Gmelin, no harsh critic, has queried it as a synonym. That laborious compiler prefers the engraving selected by Schröter as a representation, namely, the *Ter. truncata*, a most natural selection at a time when figures, not description, seem to have been the criterion for recognitions. For Gualtier's engraving is a rude representation of that well-known shell, and the name *scobinata* was

taken from the language of that author: the *truncata*, however, is striated (not smooth, as declared), is not of a roundish ("subrotunda") shape, and instead of one beak ("nate perforata") only being perforated, has the orifice formed by the two conjointly. Our author, who did not himself possess the species, has added nothing in his manuscript to the description which originally appeared in the tenth edition.

### *Anomia aurita.*

The name of this shell also was derived from the language of Gualtier ("nonnihil aurita"), and I cannot but suspect, from the extreme brevity of its description strongly contrasting with his accounts of those *Terebratulæ* which he had himself inspected (*truncata*, *pubescens*, *caput-serpentis*), that Linnæus has constructed both this and the preceding species from the engravings only: the circumstance that he did not himself possess examples somewhat favours this supposition. Gualtier's cited figure is execrable, but has been quoted for *T. caput-serpentis*, and is not so unlike a specimen of that variable species with the beaks eroded from constant attrition. It is impossible, from the paucity of indicated features, and the rudeness of the cited illustration, to positively pronounce what our author intended. Naturalists have acted wisely, therefore, in avoiding any positive recognition; the *caput-serpentis* has, however, been suggested as its representative, and to that species (if we should not wholly dismiss the name from our catalogues) it may be referred with a note of interrogation appended. Nothing has been added in the revised copy to the published diagnosis, which stands as it originally appeared in the tenth edition.

### *Anomia retusa.*

Dillwyn, who copies the diagnosis of this species from the 'Systema,' thus speaks of it: "Linnæus appears to have given the above description from a shell which Pennant sent him,

but it is so short that the species has not been ascertained by any subsequent author." Now Pennant, in the 'Upsala Transactions' (vol. i. p. 38, pl. 5, f. 4) has described and delineated an *Anomia* from Norway (without bestowing upon it a specific name) the *Terebratula caput-serpentis* of modern writers (Sow. Thes. Conch. vol. i. pl. 68, f. 1, 2, 3), and that shell perfectly agrees with the characters of *A. retusa*, and alone of the recorded Norwegian species does so. There can be little doubt, then, that it was the species intended by our author. Specimens thus named, moreover, were found wrapped up in paper in the Linnean collection; but there is no evidence, from the list of the contents of his cabinet, that they ever belonged to him.

The original description in the tenth edition of the 'Systema' is preserved unaltered in the final one, as well as in the second edition of the 'Fauna Suecica,' and, though brief, enabled Gronovius to correctly determine the species. Should not the name *retusa*, then, be preferred to *caput-serpentis*, an epithet first and erroneously bestowed on the same shell in the twelfth edition of the 'Systema'?

### *Anomia gryphus.*

The numerals 192 on a worn specimen of this shell in the Linnean collection refer us to the *Anomia Gryphus* of the 'Systema Naturæ.' Linnæus appears to have soon discovered his error in placing it in the genus *Anomia*, as we find a marginal note in his writing against this species—"sed cardo Ostreæ." The marked example (as I am informed by Messrs. Sharpe, Davidson, and Salter) is the *Gryphæa obliquata* of Sowerby's 'Mineral Conchology' (pl. 112, f. 3). The reference to Rumphius was probably misprinted, as the D of plate 59 represents an *Echinus*: B was probably intended. The cited engraving in Lister, which is precisely like Bonanni's figure, as well as that referred to in the 'Museum Tessinianum,' have been quoted by Deshayes for *G. arcuata*.



## Anomia pecten.

“The only specimen in the Linnean collection which at all answers to the description is the *Strophomene (Orthis) pecten*, (Dalman, Vet. Ac. Hand. 1827, pl. 1, f. 6.—Hising. Lethæa Suec. pl. 20, f. 6) still preserved in the box so marked in the cabinet. Dalman’s figures and description prove that the Swedish naturalists have kept up the knowledge of the species. The shell to which Sowerby has given the name of *Orthis Pecten* (Sil. Syst. p. 21, f. 9) is very different, and may be readily distinguished by its finer and more numerous striæ, and by its greater length; *O. expansa* of Mr. Sowerby (Sil. Syst. pl. 20, f. 4) appears to be the cast of the same shell; this latter appellation may consequently be retained for the Sowerbian *pecten*.

“The Linnean species may be described as follows:—*Strophomene pecten*. Semicircular; hinge-line straight, slightly produced beyond the sides of the shell. Upper valve slightly convex, flattened near the apex. Under valve nearly flat, raised a little towards the apex, and slightly concave at the sides. Valves covered with regularly radiating striæ, about twenty in number at the apex and increasing to near 100 at the margin by the insertion of additional striæ between the others, and not by bifurcation. Striæ smooth at the top, roughened at the sides by numerous fine cross ridges. One or two strong concentric ridges. Hinge area equal on each valve, sloping inward diagonally; on the upper valve a triangular portion in the middle of the area is raised up into an arch forming a semi-cone; in the lower valve is a rounded opening opposite to and rather larger than the arch.

“The specimen being a little chipped at the sides, the production of the ends of the hinge-line can only be judged of by the lines of growth on the body of the shell; the breadth of the specimen is one inch (if perfect it would probably be an eighth more), its length is seven-eighths of an inch. I have found this shell in the dark limestone of Coniston, which is the lowest bed of the Silurian System in the North of England, and I am not aware that it has been noticed elsewhere in this country, nor have I found any mention of it in any of the

French or German writers, as the shells to which they have given the name of *Orthis Pecten* all belong to other species.

“The only addition in the revised copy of the ‘Systema’ is a reference to plate 447 of Lister’s ‘Historiæ,’ a mere copy from the previously cited figure.” (Sharpe MS.).

### *Anomia striatula.*

With so meagre a description, in the absence of any pictorial reference, or any recorded locality, it was impossible to determine this fossil species. In the revised copy of the ‘Systema,’ however, Linnæus has indicated “List. 462” as a delineation of it; unfortunately, the engraved specimen being neither perfect nor characteristic, the figure, as Mr. Davidson informs me, cannot be positively recognised; hence the definition being insufficient, the species must be finally expunged as a Linnean one. The *Terebratula striatula* of Sowerby and Mantel was not intended for the Linnean fossil.

Of the shells in our author’s cabinet, and he has declared his possession of the species, that which best (yet imperfectly) answers to the combined characters of the engraving and description is a *Terebratula*, which looks something like the *resupinata* of the ‘Mineral Conchology.’

### *Anomia truncata.*

This species has been recognised by naturalists from its excellent description, which is far more detailed than is usual in the ‘Systema.’ The figure referred to in Lister presents much general resemblance to *truncata*, but exhibits a fossil and not a recent *brachiopode*. In the manuscript of the younger Linné, “Gualt. 96, A,” erroneously ascribed by his father to *scobinata*, is transferred more justly to the present shell, for which (however rude) it was evidently designed.

A paper inscribed “truncata,” in the Linnean collection, enveloped some specimens of the *Terebratula truncata* of

authors (Sow. Thesaur. vol. i. Terebrat. f. 64, 65); a circumstance confirmatory of the received opinion.

### *Anomia reticularis.*

"In the Linnean collection are several specimens of this fossil, which alone of those present—and its presence in his cabinet has been recorded by our author—answers to the description in the 'Systema.' The species, which is well known, and is found very abundantly in all the beds from the Devonian to nearly the bottom of the Silurian System, has received the following appellations:—

"*Anomites reticularis*, Wahlenburg, Nov. Act. Soc. Upsal. vol. viii. p. 65.

"*Terebratulites priscus*, Schlotheim, Petrefact. pl. 17, f. 2.

"*Atrypa reticularis*, Dalman, Vet. Ac. Handl. 1827, pl. 4, f. 2.—Hisinger, Lethæa Suecica, pl. 21, f. 11.

"*Terebratula affinis*, Sowerby, Min. Conch. pl. 324, f. 2.

"*Atrypa affinis*, Sowerby, Sil. Syst. pl. 6, f. 5.

"*Terebratula prisca*, Bronn, Lethæa Geog. pl. 2, f. 10.—Phillips, Cornwall and Devon, pl. 33, f. 145.

"The name of *reticularis*, being traced back to Linnæus, must henceforth be adopted to the exclusion of the many others it has since received." (Sharpe MSS.)

### *Anomia plicatella.*

The *Spirifer* delineated in our plate (4, f. 2) is preserved in the box thus marked in the Linnean cabinet, and perfectly agrees with the definition of the species. Mr. Salter recognised it as *Spirifer plicatellus* var. *interlineata*, and Mr. Davidson as the *Delthyris cystæna* of Dalman, which he regards as identical with the *interlineatus* of Sowerby.

Besides the shell figured there is also, in the same drawer of the Linnean collection, a specimen of *Spirifer interlineatus* (Sowerby, Sil. Syst. pl. 6, f. 6) which has fine longitudinal striæ covering rounded ribs, though in other respects a very different

species from that figured : this throws a slight doubt upon the shell to be chosen for Linnæus's *A. plicatella*, but the expression "*striæ in plicarum cavitatibus*" is so exactly applicable to the shell figured, which is smooth at the top of the ribs, while in the *interlineatus* the ribs are entirely covered with striæ, that we must adopt the former for the veritable species. I am not certain it has ever been delineated, unless Dalman's *Delthyris cystæna*, found in the Silurian Rocks of Gothland, should be identical with it. The *Terebratula plicatella* of Dalman belongs to another genus, as also does the *T. plicatella* of the 'Mineral Conchology.' (Sharpe MSS.)

Mr. Salter, in the 'Memoirs of the Geological Survey,' has considered the distinctions between *interlineatus* and *plicatella* proper to be of mere varietal importance.

### *Anomia crista.*

"I cannot find a specimen in the Linnean cabinet to which the whole of the description will apply. The Swedes (Wahlenburg, Nilsson, Hisinger) have handed down so many of the fossil species of our author in an unbroken chain of tradition, confirmed in so many cases by the types in the collection of Linnæus, that the *Spirifer*, recognised by them (*Terebrat. crista*, Hisin. Vet. Acad. Handl. 1826, pl. 7, f. 4.—*Delthyris crista*, Dalman, Vet. Acad. Handl. 1827, pl. 3, f. 6 : Hising. Lethæa Suecica, pl. 21, f. 5.) for this species of *Anomia*, may be accepted as such with some degree of confidence." (Sharpe MS.) This opinion is in harmony with that of Mr. Davidson.

### *Anomia lacunosa.*

The shell contained in the box marked for this species in the Linnean collection agrees tolerably with its description, and proves to be the *Anomites lacunosus*, Wahlenburg, Nova Act. Soc. Ups. 8, pl. 6, 7, n. 12.—*Terebratula lacunosa*, Dalman, Vet. Acad. Handl. 1827, pl. 6, f. 1 : Hisinger, Lethæa Suecica, pl. 23, f. 3.—*T. Wilsoni*, Sowerby Min. Con. pl. 118, f. 3 ;

Sil. Syst. pl. 6, f. 7*a*, &c. Mr. Sharpe, to whom we are indebted for this synonymy, remarks, that "the species is common in the Upper Silurian Rocks both in this country and on the Continent. More than four teeth are present in the elevated portion of the upper valve (the number being from six to eight), but there is no other specimen in the Linnean collection which answers so well to the description in the 'Systema'; and of this species there are four examples." I fear some admixture of specimens must have occurred during the last few years. Mr. Salter fancies that in 1848 he had seen two of *borealis* (Schloth.) there, and Mr. Davidson states that he found in the box four examples of *Rhynch. Wilsoni*, one of *R. nucula*, and one probably of *R. Moorei*. Mr. Sharpe and myself were so fortunate as to have examined the collection previous to the ill-judged and unauthorised attempt of a tyro to rearrange the collection in modern genera.

### **Anomia pubescens.**

The shells (Brit. Moll. pl. 56, f. 4) enclosed in the box thus marked in the Linnean cabinet are the young of our British *Terebratula caput-serpentis*. The downy efflorescence, mentioned in the description, and from which the name was derived, no longer covers them; it was, doubtlessly, some extraneous substance with which they had been coated. The conclusion arrived at from an examination of the types was anticipated by naturalists from the description and the locality. The division of the species by our author was not unnatural, for the sculpture of the fry is much coarser than that of the adult; the shape, too, is different.

### **Anomia farea.**

The box thus marked in the Linnean collection encloses specimens of the *Terebratula obsoleta* of Sowerby's 'Mineral Conchology' (teste Davidson, Salter, Sharpe, and S. Wood), which

answer to the brief account of the species in the 'Systema.' "These examples," observes Mr. Sharpe, "look like our English Oolitic ones," and I think it highly probable were derived from this country through Pennant or Solander, who appear to have furnished our author with many of his specimens. No locality is given; had the "in nostris montibus" been declared, one would have expected rather the *T. octoplicata* or *T. plicatilis*, which are abundant in the chalk of Sweden, and would equally agree with the definition; these, however, are not present in the Linnean cabinet. (Sharpe MS.) In default of a better representation, Linnæus, in his revised copy, has referred us to "List. t. 450, f. 6," a rude figure, which exhibits somewhat of the general aspect of the specimens, but is pronounced by Dillwyn (not by Lamarck) to have been intended for the *T. pectita* of Sowerby.

### **Anomia caput=serpentis.**

Two very distinct shells have been thus designated by Linnæus in the two principal editions of his 'Systema'; in the tenth the *Anomia* first appeared as a smooth fossil species, very briefly described, yet with a single harmonising reference to a figure; in the twelfth, a recent striated one is announced, fully described, indeed, yet with a discordant synonymy. It is the latter which was originally published in the second edition of the 'Fauna Suecica,' where the species previously so named in the 'Systema' was not referred to, which of late years has been generally considered identical with our North British *Terebratula*, so called in the 'Thesaurus Conchyliorum' (vol. i. pl. 68, f. 1 to 4); and since it corresponds very fairly with the description, and no other known species from the declared locality equally suits, there is every reason to be satisfied with the identification. Neither of the quoted figures represent it, or agree with the diagnosis. The erroneous reference to Gualtier, only annexed in the twelfth edition, was probably a misprint; for plate 96, figure D (rightly erased by the younger Linné), had been correctly cited by Linnæus for his *Ost. mal-leus*. Since all the other figures of that plate have also been

assigned by him to other species, except C (an apparently execrable delineation of *Terebratula decollata*), that latter, perchance, was the one meant: B would have been more suitable, since it was probably intended for the shell at that period designed by our author. The original description of the species in the tenth edition stands thus: "A. testa ovata, lævi, gibba; valvula altera apice longiore. Column. purp. 22, f. 2. (Copied by Lister, Hist. Conch. pl. 453, f. 12) Habitat . . fossilis." Now in the Linnean cabinet, and our author possessed the species from the first, are two specimens which bear a strong likeness to Columna's figure, a circumstance not to be asserted of any other fossil there present. It is not very improbable, then, that these were the original types, yet, unless the engraving referred to should be clearly and indisputably a representation of them, they are of no authoritative value. Of the engravings known to me, figure one of plate 101 of Sowerby's 'Mineral Conchology' appears the nearest likeness. It is a representation of the *Terebratula ornithocephala*, which shell is the species supposed to have been intended by Columna. In the first volume (1773) of the 'Upsala Transactions,' which appeared subsequently to the final edition of the 'Systema,' Linnæus has published a figure of his recent *Anomia caput-serpentis*. The engravings (pl. 5, f. 1, 2, 3) appear designed for the smooth *Terebratula cranium*, and it is stated that the species delineated, received from Bergen, in Norway, was identical with the fossil described in the tenth edition of the 'Systema' (a seeming acknowledgment of the distinctness of that of the later edition), which had not previously been known to our author in a recent condition. Had not Columna's figure been avowedly taken from a fossil, it might have been accepted as a rude representation of the same species. Unfortunately the description which accompanies the figure in the 'Transactions' does not suit it, being similar to (copied from?) that of the twelfth edition of the 'Systema,' with the obnoxious "striata" still preserved. It is not unworthy of notice, that this paper immediately follows that of our English Pennant on the other *caput-serpentis*.

Are we, then, to regard the species as pictorially defined in the tenth edition, and bestow the name on Columna's fossil; to look solely to the details of the twelfth edition, and, by retaining

the name for our North British shell, avoid further confusion of nomenclature; or to yield it to the species actually delineated by Linnæus? This must be left to the judgment of naturalists, whose verdict must be influenced by the correctness of Columna's figure; since, if no positive determination of the species represented in that work can be arrived at, it is clear that there was no definition at all in the earlier edition.

### *Anomia terebratula.*

The *A. terebratula* first appeared as a fossil species in the tenth edition of the 'Systema,' with a synonymy from which Lister must be erased, since his figure does not answer to the description. Klein's shell (copied from Columna) is called *Terebratula* as a generic appellation; hence, probably, the use of that name as a specific epithet by our author. These figures, though not opposed to the language of Linnæus, are rude, and perhaps irrerecognisable, yet one might fancy that the combined pictorial and descriptive definition was adequate for the recognition of the species, since Lamareck has indicated Klein's figure as the sole representation of his *Ter. Kleinii*, which latter is thought by Mr. Davidson, from personal examination of the Lamareckian type, to be a biplicated variety of the *Ter. perovalis*. Now Mr. Davidson, who has likewise examined the Linnean collection of *Brachiopodes*, considers the specimen (an Oolitic fossil), which best answers to the Linnean description, and is somewhat like the figure referred to, to be apparently a variety of *T. perovalis*, intermediate between the typical form and *T. Phillipsii*, and approaching, likewise, some individuals of *T. intermedia*, that are almost indistinguishable from certain specimens of *perovalis*. The coincidence is a curious one, and certainly favours the idea of the supposed identity of *T. Kleinii* with the Linnean species.

In the 'Fauna Suecica' (ed. 2), where the same diagnosis appears, but with the erroneous and discordant citation of Lister only, a recent *Anomia terebratula* is indicated as inhabiting the Norwegian sea; no further particulars, however, are mentioned by Linnæus, who probably determined his species



from its likeness to the engraving referred to. Thanks to Lovén, Middendorff, and Nillson, our knowledge of the shell-fauna of the North of Europe is tolerably accurate, and we may fairly presume that the supposed analogue was either *septigera* or *cranium*: the latter is still in the collection. Although in the twelfth edition of the 'Systema' the original synonymy and description was reproduced, with the mere substitution of "in M. Norvegico" for the previous "fossilis," some writers upon recent conchology have strangely essayed to identify it with the *T. vitrea* of Born, a Southern shell wholly destitute of the folds invariably assigned to the species in question. No smooth triplicated form, indeed, is recorded in the Monograph of recent *Terebratulæ* by the late G. B. Sowerby. Gmelin, Schröter, Lamarek, and the majority of conchologists, treat it as a fossil.

### **Anomia angulata.**

One fossil alone in the Linnean collection answers to the description of this species. It is contained in the box so marked in our author's cabinet, and is, as determined by Messrs. Sharpe, Davidson, Salter, and S. Wood, the *Terebratula excavata* of Phillips (Geol. York, vol. ii. pl. 12, f. 24), a shell obtained in the Mountain Limestone in the Isle of Man. Mr. D. Sharpe has communicated likewise the following particulars:—"This species of *Terebratula* varies both in general shape and in the number of plaits, but the remarkable compression or excavation on the sides renders it easy to be recognised. The *T. angulata* of the 'Mineral Conchology' (504, fig. 4) exhibits essential differences. The Linnean species appears to be confined to the Mountain Limestone, and is not a very common shell." The cited figure bears a general resemblance to the typical form.

### **Anomia hystericita.**

"The tray marked for this species in the Linnean cabinet contains the internal casts of two distinct species. That which

I believe Linnæus meant for his *A. hystera*, for it has been delineated by himself in the 'Museum Tessinianum' (pl. 5, f. A, 1, 2, 3, 4), is the shell now known to belong to *Orthis striatula* (*sinuata* of Sch.), and has been figured by Baumer in 1763. The other is the cast of a *Spirifer* from the Rhine shales." (Davidson and Salter MSS.) The doubtfully cited figure in Columna has been copied by both Klein (f. 75) and Lister (pl. 453, f. 11).

### *Anomia biloba.*

The fossil contained in the box thus marked in the Linnean cabinet alone of those present answers to the description in the 'Systema.' Messrs. D. Sharpe, Davidson, Salter, and Searles Wood, who have examined the type, pronounce it to be the *Spirifer sinuata* of Sowerby (Sil. Syst. pl. 13, f. 10), and the *Delthyris? cardiospermiformis* of Dalman (Vet. Ac. Handl. pl. 3, f. 7).

"In addition to the features detailed by Mr. Sowerby, it may be added that the striæ are of unequal length, ten or twelve on each lobe, and crossed by a few concentric ridges. The smaller valve is truncated, and has no hinge area; the larger valve has a triangular area, with a triangular opening, and no deltidium. In our specimen the ears are partially rubbed off.

"Dalman has not improved the arrangement of the *Brachipodes* by his division of the genus *Spirifer*. If we follow Mr. Morris in limiting the genus *Delthyris* to those species in which the hinge-line is interrupted by the apex of the smaller valve, which is in accordance with Dalman's generic character 'Margo cardinalis transversus nate interruptus,' we shall obtain a very natural group, of which the *Terebratula psittacea* is the recent type, and to *Delthyris* so limited the species under consideration does not belong: it, perhaps, deserves to be formed into a genus, but in the mean time must remain with *Spirifer* where Mr. Sowerby placed it, until this group of shells has been thoroughly examined and rearranged. The species has a wide geographical range, being found in Sweden, Germany, England, and New York: it appears to be limited to the

Wenlock Formation." (Sharpe MS.) "It is a true *Orthis*, as I showed many years ago." (Davidson MS.)

### *Anomia placenta.*

This *Placuna* (for the modern genus is not doubtful, since all the cited figures represent members of that little group) comprehends more than one species in its synonymy. Lister (the necessary circuitous style of reference to whose first and imperfect edition has been changed to 225, its modern equivalent, in the revised copy of the 'Systema') exhibits *P. placenta*, but with the dorsal edges almost as little sloping as in *P. papyracea*, which last is the shell figured by Gualtier. Seba's plate, which was not quoted in the tenth edition, contains both of these, and *P. sella* besides. Thus no less than three out of the four known *Placunæ* are included by the synonymy, and as the term "orbiculata" was not formerly used in so restricted a sense as at present, and the colouring is not mentioned in the 'Systema,' all these would, perchance, have alike merited the name *placenta*, had it not been for the details mentioned in the 'Museum Ulricæ,' where the decided inequality of the teeth in length being expressly stated, confines the name to the *P. placenta* of authors solely. And this is the shell (Crouch, Introd. Lam. Conch. pl. 12, f. 11) which has been marked for the species in the Linnean cabinet.

The "cardo rufescens" of the twelfth edition of the 'Systema' is scarcely intelligible to me.

### *Anomia spinosa.*

Not being sufficiently conversant with fossil species, I have sought the aid of our highest authorities on the subject. Mr. Davidson, who in knowledge of the *Brachiopodes* is second to no man breathing, has thus succinctly answered my inquiries: "I believe, from the very vague data given by Linnæus, that the *Rhynchonella spinosa* (Knorr, Lap. Diluvii, pl. B, 4, f. 4) was the species he designed. For it is a common English Oolitic

fossil, which answers to the ‘*spinis longitudine testæ*,’ and has been figured by Walch (1768), Walcott (1799), and eventually as *Terebratulites spinosus*, by Schlotheim in 1813.”

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## MYTILUS.

Linnaeus, in his manuscript, has proposed the separation of certain of his species (*viridis*, *bidens*, &c.) under the name of *Perna*, which he has thus characterised:—“*Dens terminalis, unus alterve insertus; margo lateralis fossula excavatus.*” Though somewhat similar to the restricted *Mytilus* of modern writers, the genus would have been more confined, since our author did not include such as had granular denticles (*edulis*, for instance), or an apical plate (*bilocularis*). He was puzzled about *hirundo*, which he referred to his intended genus with a note of interrogation attached.

### *Mytilus crista-galli.*

In the box thus marked in the Linnean cabinet is still preserved the *Ostrea crista-galli* (Chemn. Conch. Cab. pl. 75, f. 684) of authors. The excellent description in the ‘*Museum Ulricæ*’ caused the early recognition of this peculiar-looking species. The reference to Sloane must be erased from the synonymy.

### *Mytilus hyotis.*

The description in the ‘*Museum Ulricæ*,’ illustrated further by the figure of Rumphius (the engraving of Argenville does

not exhibit the required characters, easily effected the early recognition of this large and strongly-featured oyster. It is the *Ostrea hyotis* (Chemn. Conch. Cab. vol. viii. pl. 75, f. 685) of authors. Specimens exist in the Linnean cabinet, but are devoid of authority, since the species is not mentioned in the list of its original contents.

### **Mytilus frons.**

The figure of Argenville is so characteristic, and agrees so correctly with the original description in the 'Systema,' that the species being thus pictorially defined was early recognised by Born. Even now, I know of no better engraving than the one cited by our author (Argenv. Conch. ed. 1, pl. 22, f. D). From the polymorphous nature of the shell, it has been separated in Lamarck's 'Animaux' into three suppositious species, *O. rubella*, *O. limacella*, *O. dorida*, all which must again be reunited as *Ostrea frons*. I speak more boldly upon this point, from a long study of that most difficult genus *Ostrea*, and the comparison of a vast number of specimens. From the expression "*nigra*," in the 'Museum Ulricæ,' one may doubt as to the identity of the species there described: it was perhaps that variety of *O. crista-galli* in which one of the lips only is scabrous.

### **Mytilus margaritiferus.**

The language of the 'Museum Ulricæ' leaves no doubt of the identity of this species with the *Meleagrina margaritifera* of Lamarck's 'Animaux sans Vertèbres.' Upon this all writers are agreed; the misfortune, however, is, that both writers confused more than one species under the same appellation. "In utriusque Indiæ oceano" is the habitat given in both editions of the 'Systema;' the locality list of Lamarck embraces both Ceylon and Mexico. Now there are two very distinct species, at the least; one of a rich pure dark green, with flat white imbricated scales (Chemn. Conch. Cab. vol. viii. pl. 80, f. 718), the

other, the Mazatlan variety (?), of which I know not a good delineation, of a yellowish or olivaceous grey, with crowded and very concave scales of the same hue. The cited engravings in the 'Systema' are by no means characteristic, several of them being taken from decorticated specimens, whose shape even had probably been altered by the polishing-wheel. Argenville's figure probably represents neither of them. As the name can only be retained for one of the two, expediency suggests that the less known American species should receive a new specific epithet (*Pacifica*, for instance), and *margaritifera* be bestowed on the Chemnitzian form alone. That shell is still preserved in the Linnean cabinet, and alone (though many smaller *Meleagrinae* are present) answers correctly to the limiting details (viridi-fusca, maculis albis, &c.) of the 'Museum Ulricæ.'

### **Mytilus unguis.**

In the absence of an illustrative figure, even the modern genus in which this ambiguous shell should be placed has become uncertain. No one has yet dared to surmise what our author intended. He did not possess it himself: the type was in the Royal Museum at Dronningen. From the "subrotunda—juxta basim altero latere inflexa ut Myt. margariferus" (M. U.), one is led to suspect that it might have been an Aviculoid *Meleagrina*; from the "cardo margine plano excavatus sulcis tribus obsoletis" (M. U.), one might fancy it a *Crenatula* or *Perna*, but what adult specimen of any of these genera will likewise accord with the "longitudinaliter striata, alba, pellucida" of the same work? The division in which we find it placed in the 'Systema' adds the character "planus seu compressus" to the other details there enumerated. Certain young oysters might equally suit the language of the 'Museum Ulricæ,' but assuredly it will be better to wholly omit so indefinite a species from our catalogues.

## **Mytilus lithophagus.**

The box thus marked in the Linnean cabinet contains two species, both of them included by Lamarck in his *Modiola lithophaga*. The Indian form (Chemn. Conch. Cab. vol. viii. pl. 72, f. 729) has been lately distinguished as *Lithodomus teres*, the name *lithophagus* being retained for the common Mediterranean *Lithodomus* (Sowerby, Genera Shells, *Lith. dactylus*).

The “extus picea” “oblique striata” of the ‘Museum Ulricæ’ is adverse to this arrangement of nomenclature; but the circumstance that not one of the cited figures represents the narrow Indian variety, favours it. Lister’s engraving (37 was clearly a misprint for 39, and is thus altered in the revised copy) represents a fossil; Bonanni, Argenville, Gualtier, &c. the European shell. The expressions “suavissimus” and “dentes cardinis nulli” have been added to the description in the revised copy of the ‘Systema,’ and “Act. Paris. ext. 5, p. 467, t. 478” referred to as an additional synonym.

## **Mytilus rugosus.**

The *Saxicava rugosa* of authors is not present in the Linnean collection. The shells contained in the box thus marked in the cabinet are worn, full-aged specimens of *Saxicava arctica* (Turt. Dithyra Brit. pl. 2, f. 13, as *Hiatella oblonga*) and perfectly agree with their published description. Lister’s engraving is not unlike them; Gualtier’s figure, on the contrary, is that of a young *Unio*; so that the attached ? was probably transposed by accident. Linnæus appears to have found out the identity of the species with his *Mya arctica*; for in his MS. he has almost erased its description, in his endeavour to convert the species into a true *Mytilus* (*Magellanicus*).

## **Mytilus bilocularis.**

Even in the tenth edition of the ‘Systema’ the specimen subsequently described in the ‘Museum Ulricæ’ was pointed

out as the type of this species. Although there are several species of *Tichogonia* (to which genus, from the "dissepimento albo" this mussel clearly belongs) in the Linnean cabinet, they are devoid of typical authority, since the presence of the species has not been indicated in the list of its contents. The details of the 'Museum' demonstrate its identity with one of the forms of the shell similarly named in Lamarck's 'Animaux sans Vertèbres;' modern research, however, has divided the latter into several species. The name *bilocularis* should therefore more particularly be retained for that which has been indicated as the more typical form by the paragraph "color cæruleus huic proprius; sunt tamen varietates, &c." (M. U); this character excludes the varieties *c. d.* of the Lamarckian species. As the number of denticles is now also held of importance, the "cardo apice denticulo obsoleto," strictly interpreted, will confine the number to a single one. The only doubt seems to rest between Kuster's *T. Wiegmanni* and his *T. bilocularis*, the former of which agrees more precisely with the stated number of denticles (may not this character depend upon growth?): strictly speaking, however, neither of the two exactly harmonises in that respect with the description, for even in *Wiegmannii* two denticles are ascribed to one of the valves.

### ***Mytilus exustus.***

From the absence of any illustrative engraving which might further limit the specific characters, much speculation has occurred in respect to this species. Four several shells have appeared as rival claimants for the name *exustus*; a *Tichogonia* (in Born), *Modiola sulcata* (in Gmelin), *Mytilus Magellanicus* (in Chemnitz), and the shell named *Mytilus exustus* by Lamarck. Linnæus would certainly have included the first of these in *bilocularis*; the two next are coarsely sulcated, not merely striated; but the last agrees admirably with the "minus crassa" and other details of the 'Museum Ulricæ.' The locality "Jamaica" is also correct, and the identification is supported by a reference in the copy of the younger Linné to "List. Conc. t. 366, f. 206," which is an excellent representa-



tion of that shell. Moreover, an example of the Lamareckian *exustus* (Encycl. Méth. Vers, pl. 220, f. 3, 4) is still preserved in the Linnean collection, where it is the only specimen there present which correctly agrees with the published description. Nevertheless, although its presence in the cabinet is asserted in the list appended to the tenth edition (not so in the final one), I dare not pronounce upon the identity, because the specimen agrees still better with the ideal of *Mytilus bidens*.

Mörch declares the Linnean *exustus* to be identical with the *Mytilus Domingensis* of Lamareck and D'Orbigny. I know not the grounds of his decision: the colouring scarcely harmonises with the "ferrugineus" of the 'Museum Ulricæ.'

### ***Mytilus barbatus.***

In the box thus marked in the Linnean cabinet is still preserved the *Modiola Gibbsii* of Leach (Zool. Miscel. pl. 72, f. 2), the *Modiola barbata* of the 'British Mollusca,' which alone in the collection agrees with the definition of the species. Linnæus, in his revised copy of the 'Systema,' has added "Color incarnatus; dens nullus," which brilliant colouring is natural to the shell, when the epidermis, with its serrated bearding, has been removed. Both Gualtier and Ginanni exhibit the shell described (pl. 2, f. 2), but the *barbatus* of the 'Fauna Suecica,' judging from its Northern locality, was in all probability a young *modiolus*.

### ***Mytilus edulis.***

The *Mytilus edulis* of authors is marked (Turton, Dith. Br. pl. 15, f. 1) for this species in the Linnean collection. In the revised copy of the 'Systema' "cardo fere edentulus" has been written, and the reference to Lister, f. 20, corrected by the addition of another cypher: references to "Penn. Zool. iv. t. 63, f. 73," "Knorr, Conc. 4, t. 15, f. 2," "Regenf. t. 7, f. 8," have been annexed to the synonymy by the younger Linné. From

the “cardo absque denticulo” of the ‘Museum Ulricæ,’ and the mention of a larger tropical form, it is not unlikely that the specimen there described was a different species: the denticles, however, are very minute, and usually concealed by the overlapping of the epidermis.

### **Mytilus unguulatus.**

By the addition of a reference to Lister, whose figure has been quoted for *canalis* by Lamarck, and of a tropical locality, Linnæus, in the twelfth edition of his ‘Systema,’ has confused the Mediterranean shell, which he had doubtfully constituted (“an varietas prioris”) in his earlier edition. Of that shell two marked specimens are still preserved in his collection, one a large distorted and greatly incurved example of *edulis*; the other, which we have here delineated (pl. 2, f. 4), that large South European form of the same variable species, which has been termed *Galloprovincialis* by Lamarck. The quoted figures of Gualtier bear much likeness to the specimen delineated; the engraving of Regenfuss represents the same species, but is still nearer to the typical *edulis*.

### **Mytilus bidens.**

Born, in the synonymy attached to his *Mytilus bidens*, has confused at least three species, *M. Magellanicus*, *exustus*, and *niger*; the two latter of these are, however, excluded by the expression “sulcata,” and by the magnitude (nearly two inches) attributed to the mussel in his description; Schröter, Gmelin, and Dillwyn have similarly appropriated this name to the *Mytilus Magellanicus* of Chemnitz. Deshayes, who comments on the absurdity of identifying a large purplish coarsely-grooved South American shell with a small ashy-horn coloured simply striated Mediterranean one, observes that the description, unaccompanied as it is by any illustrative synonymy, is utterly insufficient for the positive determination of the species. As the species stood, I fully coincide with him in this opinion, but

from the light thrown upon it through the Linnean collection (wherein its presence is asserted, and where one shell alone answers to its description), and from the manuscript references of "List. t. 366" and "Rump. Mus. t. 46, f. D," I entertain no doubt of its identity with the *Mytilus exustus* of Lamarek. This proves somewhat unfortunate, since the Lamarekian shell has been generally, and not unreasonably, considered the same as the Linnean one so named. I could almost suspect that Linnæus had forgotten his original species when he founded *bidens* in the twelfth edition. It is a curious circumstance, that whilst *exustus* is recorded as present in his cabinet in the list that accompanies the tenth edition, its name does not appear in the list annexed to the final one, wherein *bidens* was first inserted.

### ***Mytilus modiolus.***

Inability to discover a correct representation of the object he was describing caused the introduction of a diversity of species into the synonymy of this mussel. The original description in the tenth edition of the 'Systema' would suit almost any member of *Modiola* proper. Of the three illustrative engravings there referred to, the figures of Rumphius and Argenville (Bradley represents *Myt. edulis*) exhibit some large species with the general aspect of the shell (Donov. Brit. Shells, pl. 23) denominated *modiolus* by the writers on British Conchology. As such was the species understood by Gronovius, who, in that portion of his work at least, had not studied the twelfth edition. Nevertheless, Argenville's figure, though quoted as typical by Lamarek (hence the name *Papuanus* applied to our Northern shell) purports to be that of a New Guinea mussel (the older localities, however, are rarely trustworthy); and the insertion of a European shell in the work of Rumphius seems so unlikely, that we may perchance fancy his drawing designed for that closely allied congener *Modiola Philippinarum*. We learn, however, from the preface, that other objects, besides the great Indian collection of Rumphius, were engraved in the 'Thesaurus;' and from the explanatory text, that the rude

drawing was meant for the "Great common Mussel of the Netherlanders." We are reminded, too, by the habitat, that Linnæus regarded both these figures as intended for the European species, of which, at that period, they were the nearest likenesses extant. It is somewhat astonishing that none of the additional engravings cited in the synonymy of the twelfth edition, unless, perchance, that of Gualtier, which is not so unlike the Rumphian figure, exhibit the same shells as those originally referred to: Petiver and Lister (359, f. 198) represent the radiated *M. Americana* of Leach (*tulipa*, var. of Lamarck); Adanson, the *Modiola* termed by him *Lulat*, &c., &c. The restrictive "semipedalis, subviolacea, cortice nigro," however, excludes all figures, as representations, which do not harmonise with these particulars, and clearly points out our native shell as the type of the Linnean species. The "extus violacea, intus alba" of the 'Museum Ulricæ' further corroborates the established identification. The only changes made by our author in his revised copy of the 'Systema' are the erasure of "List. 256 (a typographical error for 356) f. 195," and the addition of "Postice testa ultra nates producta, edentula," and some obscure alteration in the erroneous reference to Bradley.

### ***Mytilus cygneus.***

The *Anodonta cygnea* var. *Cellensis* (Rossmäs. Iconog. pl. 19, f. 280) is marked for this species in the Linnean cabinet. The figure 8 of Lister belongs to 153, not 193: the latter was consequently a typographical error. From the correctness of the thus easily amended synonymy, its abundance, and the European locality, the shell was early recognised by conchologists.

### ***Mytilus anatinus.***

The *Anodonta complanata* (Ziegl. in Rossmässl. Iconog. pt. iv. pl. 20, f. 283) is contained in the box thus marked in the Linnean cabinet, and agrees (pl. 2, f. 1) well with the descrip-

tion of the species. No other member of the same genus, the preceding excepted, of which, indeed, *complanata* is regarded as a mere variety by that indefatigable student of the *Naiades*, the American Lea, is to be found in the collection. The referred to engravings were doubtlessly selected as the nearest representations extant; all three, however, are designed for different species. Gualtier's figure represents a *Unio*, Lister's f. 2 an ordinary example of the *Anodonta cygnea*, f. 9 a Virginian *Anodonta*. The species intended we know to have been European, from its occurrence in the 'Fauna Suecica:' and the dentition of *Unio* forbids our regarding Gualtier's shell as illustrative. Had the winged variety of *cygnea*, ordinarily termed *A. anatina*, been designed by our author, he would scarcely have written in his own copy "similis 28 (*Unio pictorum*) sed absque cardine."

### ***Mytilus viridis.***

The *Mytilus smaragdinus* (Chemn. Conch. Cab. vol. viii. pl. 84, f. 746) of authors (including *opalus*) is the species preserved in the box thus marked in the Linnean cabinet. Linnaeus originally described the species from a very young specimen: subsequently to his publication he appears to have met with more mature examples, for in his revised copy he has written "oblonga, antice compressa, sublunata," &c.

### ***Mytilus ruber.***

This shell originally appeared in the tenth edition of the 'Systema' with less than two lines of description, and a queried reference to Argenville's drawing of a young *Mytilus Afer*, a smooth brown-marbled mussel whose characters are in accordance with those demanded by the definition. The same words are repeated in the twelfth edition, save that "postice" has been replaced by "antice," and a reference to the 'Museum Ulricæ' has been added. In the Vienna reprint, the note of interrogation after the citation of Argenville has been erroneously omitted.

From the extreme brevity and utter inefficiency of the definition of this bivalve, naturalists have been baffled in their attempts at recognition. Müller, indeed, has cited a painting of *M. Afer* in Knorr, as illustrative, but merely from its similarity to the erroneously cited figure of Argenville. Solander has referred to the central H of Gualtier's ninety-first plate, which seems designed for the *Modiola barbata*. This strangely tallies with the circumstance, that the shell, which upon the whole answers best of those in the Linnean cabinet (and our author once possessed the original) to the description, is a worn and beardless red-coloured example of that species. In the present instance, however, no sure grounded conclusion can be arrived at from an examination of his collection.

From the "dente brevissimo" of the 'Museum,' where the description is unaccompanied by any synonymy, it is probable that *ruber*, whose generic position even cannot be positively determined from the account in the 'Systema,' belonged to the restricted *Mytilus* of modern conchology; yet even this conclusion is somewhat shaken by the preceding passage "sutura—excurrens fere ultra apicem," which suggests a *Modiola*, to which genus, indeed, the shell which Linnæus eventually settled upon as its representative did actually belong, as is evidenced by the "dens nullus" in his revised copy of the 'Systema.'

It is probable, then, that the *ruber* of the 'Museum' was different from the species so named in the earlier publication, where the enumerated characteristics are so few that the meagre description may be equally applied to more species than one, and becomes consequently of no value for purposes of definition.

Is it desirable to retain so ambiguous a species in our catalogues?

### ***Mytilus Discors.***

The box thus marked in the Linnean cabinet contains two species, *Mytilus (Modiola) discrepans* of Montagu's 'Testacea

Britannica' (not that of his Supplement, which is the *Crenella nigra* of the 'British Mollusca,') and the *Modiola lævigata* of Gray, &c. Both are nearly allied, and both would undoubtedly have been considered identical in the earlier period of conchology. Since, however, the ancient name can only be retained for one of them, it must be reserved for that species (the former, the *Crenella discors* of the British Mollusca, pl. 45, f. 5) with which the description more precisely accords.

A New Zealand shell, the *Crenella impacta* of Hermann, had long usurped the Linnean name, but the authenticated Norwegian locality attributed to *discors* would alone suffice to invalidate its claims to identity. The *C. marmorata* of Forbes, the *M. discors* of the earlier writers upon British *Testacea*, is not present in the Linnean collection.

### **Mytilus hirundo.**

The name *hirundo* cannot be exclusively applied to any particular species of *Avicula*, since all the members of that genus at that time known to science were grouped together in the synonymy attached to the species (?) in both editions of the 'Systema,' and almost equally answer to the meagre description. Among them are delineations of *crocea*, *Tarentina*, *macroptera*, and *semisagitta*, the two former of which are present (neither of them marked) in the *hirundo* box of the Linnean cabinet. Had the details of the 'Museum Ulricæ' been less comprehensive, or its shorter synonymy purer (each of the four figures there cited represents a different *Avicula*) the name *hirundo* might still have been continued as a specific appellation.

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## P I N N A .

*Pinna rudis.*

The colouring appears to be a more constant character in *Pinna* than it is esteemed in most genera; hence it is more than probable that the ferruginous six-ribbed *rudis* of the 'Museum Ulricæ' was distinct from the horn-coloured species, with from five to eight ribs, of the 'Systema Naturæ.' Three very dissimilar *Pinnæ* are referred to in the synonymy, two of which (those delineated by Rumphius and Ginanni, the former not being sulcated or ribbed, the latter having nearly twenty sulci) are at variance with the indicated characteristics. Argenville's engraving is not so unlike the ideal, but was apparently drawn from a broken specimen; it has been quoted by Dillwyn for his *carnea*, and by Lamarek for his *flabellum*, which latter, purified in its synonymy, seems identical with the former. The young of that shell is, indeed, horn-coloured, but assuredly not of very coarse structure ("rudior").

The *Pinna* generally recognised for this shell is the one figured for it by Chemnitz (Conch. Cab. vol. viii. f. 773), and as no better identification can indisputably be suggested (moreover, "List. Conch. 373, f. 214," and "Seba, Mus. 3, t. 92, f. 1," are cited by the younger Linné), the name may be preserved to it, as the probable *rudis* of the 'Museum Ulricæ:' that of the 'Systema' is more doubtful, and is not elucidated by the contents of the Linnean cabinet, where no shell there present corresponds accurately with the described features. There is a small reddish fragment of either a young *rudis* (of authors), or of an adult *carnea* (Chz. f. 769), which, although identical, perchance, with the shell in the Royal Museum, suits not "cornei coloris" of the 'Systema.' Our author, however, would certainly have regarded the two shells as identical.

The variety B (added only in the final edition) is a distinct species, which has been quoted, and not without reasonable probability, by Chemnitz, as identical with *Pinna nigra* (Chemn.



Conch. Cab. vol. viii. pl. 88, f. 774), and the referred to figure in Rumphius. An example of this shell is present in the Linnean cabinet.

### ***Pinna pectinata.***

This most briefly described species is pictorially defined by the engraving of Gualtier, which harmonises fairly enough with the few features that are indicated in the diagnosis. Hence, as that figure is generally, and not unreasonably, regarded as representing the abundant European species habitually thus named, that shell (despite the Indian locality attributed to the Linnean *pectinata*) has been almost universally accepted as its representative. There is a specimen of it (Turt. Dithyra Brit. pl. 19, f. 1) in the Linnean cabinet, but as our author has not indicated his possession of it, it is without authority, and was probably a subsequent addition. The reference by the son to "Penn. Zool. iv. t. 59, f. 80," favours the received opinion to which, in all cases of uncertainty, it is expedient to bow.

### ***Pinna nobilis.***

Neither of the engravings referred to exhibits the canaliculated tubes mentioned in the diagnosis. Bonanni's was omitted in the 'Museum Ulricæ.' Argenville's is erased in the manuscript of the younger Linné: both, however, are usually quoted as matured stages of growth of that shell (Chemn. Conch. Cab. vol. viii. pl. 92, f. 784) which is now generally accepted as the representative of the Linnean *nobilis*. The description in the 'Museum Ulricæ' is well suited to the *Pinna nobilis* of authors (of which *squamosa* is the matured adult), and conjointly with the "habitat in Mari Mediterraneo" is suited to it alone. Linnæus has omitted to enter the name of this species in his final catalogue of the contents of his Museum.

*Pinna muricata.*

Our author neither possessed this species nor has added aught in his manuscript to its published description. Since none of the cited figures exhibit the characteristic of alternately spineless ribs, a peculiarity insisted upon in the 'Museum Ulricæ,' it is manifest that we must not regard them as actual representations of the shell intended, but only as suggestive approximations to it. Moreover, they appear to belong to several species. Lister's figure (omitted from the synonymy in the 'Museum Ulricæ,' perchance as bearing less resemblance to the type than did the rest) represents the young of a West Indian *Pinna* furnished with five or six raised striæ, or ribs, only, and consequently by no means answering the expression "striis plurimis." Rumphius, in his cited illustration, has delineated a *Pinna*, which resembles the preceding in its sub-lanceolate contour, but is arrayed with more numerous and more closely disposed costellæ. Gualtier's broadly triangular species, *P. vexillum?* is utterly unlike either.

Of the supposed identifications of the Linnean original, Born's *muricata* is so briefly described by him as to require elucidation itself. That author, however, who makes no mention of the alternation of armed and unarmed ribs (a character which, although essential in one or two *Pinnae*, was possibly accidental in the present case), has quoted, likewise, both Knorr (Delic. pt. 6, pl. 20, f. 1) and Petiver; the former of which I regard as most agreeable to the ideal shaped from the Linnean description; the latter is a mere copy from the cited figure of Rumphius.

A similar synonymy has been likewise ascribed to the species by Chemnitz, save that he has erroneously referred to Seba (vol. iii. pl. 92, terminal bottom figures), whose engraving (cited by Lamarck for *P. nobilis*) neither corresponds with the characters specified by Linnæus, nor with those delineated in the 'Conchylien Cabinet.' The drawing in the last-named work answers admirably to the description in the 'Museum Ulricæ,' except that the scales are delineated as tubular, an error cor-

rected by the words of the text "squamis patulis, acutis." Schröter, Gmelin, and Dillwyn, who have wisely rejected the reference to Seba, and queried that to Lister, admit the species as determined by Chemnitz. Gmelin, moreover, in quoting Seba, cites the top figures (generally regarded as representations of *P. rudis*) in place of the lower ones; the change, however, is not for the better, since the delineated characters are equally at variance with those indicated in the description.

Lamarek, who, in addition to the three original synonyms and the previously specified engravings of Knorr and Chemnitz (the latter stated to be inaccurate), has referred us likewise to a figure of *P. pectinata*! (Da Costa, Brit. Conch. pl. 16, f. 3), in his account of the ribs, has substituted "raris" for "plurimis," a change which is far too radical in its nature to be permitted, especially in a species where the data for arriving at a correct conclusion are so scanty as in the present one: he has omitted, likewise, all mention of the alternation of the costæ. Upon the whole, it seems advisable to bestow the name of *muricata* upon the Chemnitzian species, referring the Linnean to it with a note of interrogation appended.

### *Pinna rotundata.*

Schröter, Gmelin, and Dillwyn have accepted the identification of this species by Chemnitz, who has delineated (Conch. Cab. vol. viii. pl. 93, f. 787) for the type of it a worn example of the *Pinna squamosa*. Now this shell, which is identical with the *nobilis* of Philippi and Lamarek, neither corresponds with our author's brief description nor with the figure he has cited. Had Linnæus wished to indicate that bivalve, he would not have referred to plate 79 of Gualtier, but to plate 80, a transposition which has been effected by the above-mentioned writers. Neither has he noticed the extreme size which that Mediterranean shell is wont to attain, and the colouring is stated by him to be whitish instead of rufous. Even the language relative to the rounding off of the margin (the source of the name, and almost the sole ground for its appropriation to *Pinna squamosa*) is not "margo ad apicem rotundatus," as

it should have been for that species, but “ab apice extrorsum rotundatus” (rounded off from the extremity ventrally,\* as exhibited in the *P. bicolor* of Chemnitz, and the cited figure (pl. 79, C.) of Gualtier. The latter, apparently the sole source of the irrecongnisable *P. bullata* of Gmelin, has been likewise quoted by Lamarck for his *P. marginata*, and the few characters mentioned by that naturalist are not inharmonious with the description of *rotundata* in the ‘Museum Ulricæ.’ Unfortunately, however, I have not succeeded in discovering a *Pinna* in our English cabinets which exactly answers to the Lamarckian definition.

Our author has neither recorded his possession of this species nor has enlarged his former insufficient description by any manuscript additions. Hence, although the young of several kinds of *Pinna*, with some of their scales abraded, would fairly, and alike, correspond to the ideal of the Linnean *rotundata*, no certainty can be arrived at, unless the type should be still preserved in the Dronningen Museum.

### *Pinna saccata.*

Few species have been better defined by our author than his *Pinna saccata*. The figures referred to harmonise with the description of the shell in the ‘Museum Ulricæ,’ which is sufficiently ample and peculiar (“testæ sutura dorsali coadunatæ”) to ensure recognition. Chemnitz only failed to identify it from not having met with a mature example: his *vitrea* is supposed to be the fry of it. The *Pinna saccata* of Lamarck (Leach, Zool. Miscell. vol. i. pl. 51) is clearly identical; and of this a specimen, the sole one in the cabinet which suits the definition, is still preserved in the Linnean collection.

### *Pinna digitiformis.*

Our author did not himself possess this species, but referred to the ‘Museum Ulricæ’ even before that work had been pub-

\* The outer or gaping side.

lished, for a fuller account of the essential features than was consistent with the plan of his 'Systema.' No bivalve shell will agree with the account there given: "testæ sæpius utraque sutura coadunatæ, ut univalvis appareat" may be said of a *Pteropode*, not of a *Pinna*. No conchologist has determined the species; fruitless conjecture has been spared from the absence of all synonymy.

### *Pinna lobata.*

The first and last remarks upon the preceding species relate likewise to the present one. It is assuredly not a bivalve, scarcely even a *Pteropode*, though in some small degree it reminds one of a *Hyalea*. The supposed *Pinna (pennacea)* which succeeded it in the tenth edition of the 'Systema,' was altogether removed from the *Testacea* in the twelfth edition, and referred to *Sepia*: it is more than probable that these two would have shared its fate, had our author ever revised his 'Museum Ulricæ.'

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## ARGONAUTA.

### *Argonauta Argo.*

In the synonymy of both editions of the 'Systema,' as well as of the 'Museum Ulricæ,' the *Arg. tuberculosa* and *A. nitida* are confused with that shell for which the name *Argo* has more especially been reserved by conchologists. This selection was probably based upon the description in the 'Museum Ulricæ,' where "Testa maxima, fragilissima, pellucida: anfractus compressi, transversim undulato-plicati, carinati serie duplici

aculeorum brevissimorum," is far better suited to *Argo* proper than to either of its rivals. An example of that species (Sowerby, Genera Shells, Argonauta) is still preserved in the Linnean cabinet.

### **Argonauta cymbium.**

Linnæus did not possess this tiny species, which may be regarded as pictorially defined by the figure of Gualtier. "Mart. Syst. t. 18, f. 161, 162," has been added by our author in his revised copy of the 'Systema;' Martini's drawing, however, was a mere copy from the cited engraving of Gualtier. The species has been referred to *Carinaria* by Lamarck, and forms the *C. cymbium* of his 'Animaux sans Vertèbres.'

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## **NAUTILUS.**

Since all the members of this group, except numbers 273 and 279, belong to the *Foraminifera*, which are no longer classed with true shells (the habitations of molluscous animals), I shall usually content myself in this genus with a brief notice of the additions proposed in our author's own revised copy of his 'Systema,' and shall neither analyse, as elsewhere, the pictorial synonymy, nor pronounce any opinion relative to the correctness of the accepted identifications. No species, unless the circumstance should be here mentioned, is to be regarded as having been possessed by Linnæus; even the few named examples still present in his cabinet, although, probably, the original types, for they belong to those species only that were indicated as present in the list appended to the tenth edition of the 'Systema,' have the names attached in a more modern and more legible handwriting than the very peculiar scrawl of the great Swedish naturalist.

## **Nautilus Pompilius.**

So long as two species only of the restricted *Nautili* were distinguished by conchologists it was easy to determine the *N. Pompilius* of Linnæus; now that five have been indicated in Sowerby's late Monograph, it becomes desirable to ascertain which of the once supposed varieties is more especially entitled to the specific appellation. The extremely brief description in the 'Systema' might include any member of the genus, and the synonymy embraces both the umbilicated and imperforated forms. Even in the 'Museum Ulricæ' the passage "latus in minoribus umbilicatum, in majoribus exoletum" evidences, that both sections were regarded as mere varieties of the same species. In this predicament an arbitrary decision was unavoidable, and as the majority of those cited figures which represented adult examples in their natural condition belonged to the more richly painted of the two imperforated species, and that, moreover, was the commoner shell, the name has not unwisely been reserved for it in the 'Thesaurus.' A specimen of it (Sow. Genera, *Nautilus Pompilius*) is still preserved in the Linnean cabinet, and the representation of it in Martini (pl. 18, f. 164) has been cited by Linnæus in his revised copy of the 'Systema.'

## **Nautilus calcar.**

The present species appears, from the list attached to the tenth edition of the 'Systema,' to have been one of the few *Nautili* possessed by our author, in whose cabinet may be found some minute *Foraminifera* wrapped up in a paper inscribed with this appellation. The specimens fairly enough suit the cited figure 3 of Plancus and the *c* of Ledermuller (copied from the last), which have been quoted by De Montfort for his *Patrocles querelans*, and remind one somewhat of Montagu's drawing of his *N. umbilicatus*.

Linnæus, by his references to Gualtier and to Plancus, figure

4 (copied by Ledermuller, figure *d*) has confused another (and perhaps two) very distinct species, not provided with a central boss. Montagu's engraving of his *Nautilus calcar* bears little resemblance to any of those mentioned.

### *Nautilus crispus.*

In the copy of the 'Systema' that belonged to the younger Linné, "Mart. Syst. t. 20, f. 172—174," has been added to the synonymy. The two first figures were copied from those cited in Gualtier; the last, as well as Ledermuller's figure *b*, not 6 as misprinted, apparently from Plancus.

Our author, in the tenth edition of the 'Systema,' has indicated his possession of the species. The specimens wrapped up in a paper so marked in his cabinet are identical with those delineated and described by Montagu (Test. Brit. p. 187, pl. 18, f. 5) under the same appellation. Lamarck refers *N. crispus*, as recognised by Fichtel, to the genus *Polystomella*.

### *Nautilus Beccarii.*

The specimens enveloped in a paper thus inscribed in the Linnean cabinet are identical with the *Nautilus Beccarii per-versus* of Montagu (Test. Brit. Sup. pl. 18, f. 6), which is referred by Fleming and Brown to the genus *Rotalia*. The distinction between the dextral and sinistral forms of *Beccarii* was evidently not considered by the Swedish naturalist of essential importance, for he has cited figures of both kinds as illustrative of the species. "Mart. Syst. 261, t. 19, f. 178, 179, and t. 20, f. 175—177" has been added in the revised copy of the 'Systema,' the two first figures being copied from Ledermuller, the three last from the referred-to engravings in Gualtier.

Ledermuller's drawings are not original, but only copied from Plancus.



### **Nautilus rugosus.**

No additional particulars have been communicated in the revised copy so often alluded to ; nor did Linnæus possess this species, which, as Dillwyn remarks, has not apparently been recognised by any subsequent writer. The brief description, in the absence of any illustrating reference, is utterly inadequate for the purposes of definition. Hence this species must be reckoned among the irrecognisable.

### **Nautilus umbilicatus.**

Nothing is added in the revised copy to the published description. The species is not the *Nautilus umbilicatus* of Sowerby, which is a true *Nautilus*, but is one of the *Foraminifera*. No additional information respecting it is to be found in Schröter, Gmelin, Dillwyn, or Lamarek. Columna's figure seems to harmonise fairly enough with the description of Linnæus ; if, then, it should be considered a recognisable one, and examples should be found which agree with both that engraving and the words of our author, they may be regarded as representatives of the Linnean species ; if, on the contrary, they suit the drawing, but are at variance with the diagnosis, the *umbilicatus* must be held indeterminable. As the work referred to is not common in our libraries, I may remark that the drawing is like figure 10, P. of the first plate of Plancus (Conch. Min. Not.), but exhibits a decided umbilical hollow.

### **Nautilus spirula.**

The specimens (List. Conch. pl. 550, f. 2) in the Linnean cabinet which alone agree with the definition belong to the *Spirula Peronii* of the Lamarekian System. Whatever may be the differences in the animals of *Spirula* (of which three species are now enumerated), no constant differential features have

hitherto been pointed out in the shells themselves. "Mart. Syst. 262, t. 20, f. 184, 185" has been added by Linnæus in his revised copy.

### ***Nautilus semilituus.***

I can find no additional information respecting this species in any writer of the Linnean school, for, although Schröter has given some further account of it, his details appear to have been gleaned solely from figures, and not to have been derived from specimens. As was usually the case when the described specimen did not (as in the present instance) form a portion of our author's collection, he has not noticed it in his manuscripts. The cited engraving of *Columna* exhibits characters in accordance with the meagre description, and must consequently be regarded as a pictorial definition of the species intended. His figures are apparently identical with those in *Plancus* (*Conch. Minus Notis*, pl. 1, f. 10, O, P), which latter have been badly copied by Martini in one of his earlier plates (*Conch. Cab. i.* pl. 20, f. 186, 187). Judging from these rude drawings, which I do not find referred to in the more modern treatises, the *semilituus* was a member of the genus *Spirolina*: my knowledge, however, of the *Foraminifera* is limited. Montagu has delineated a *Nautilus semilituus* in the Supplement to his 'Testacea Britannica' (pl. 12, f. 3); his figure, however, does not harmonise with that of *Plancus* in *Columna*.

### ***Nautilus obliquus.***

Reference is made in the revised copy of the 'Systema' to "Mart. Sys. t. min. 1, f. h. hh." which engravings are copied from the cited ones in Gualtier's folio. Lamarck quotes these figures, and these alone, in illustration of his *Orthocera obliqua*.

## ***Nautilus raphanistrum.***

I do not find any additional information respecting the species either in the writers of the Linnean or of the Lamarckian school of conchology. Lamarck has contented himself with transcribing the Linnean description for his *Orthocera raphanistrum*.

The only example in the Linnean cabinet that answers adequately to the definition, and our author, in the tenth edition, has indicated his possession of the species, is a large *Orthocera* (pl. 5, f. 4), which looks like that delineated by Soldani in plate 37, figure M. It may, perchance, be identical with the *Nodosaria æqualis*, as delineated in Sowerby's 'Genera of Recent and Fossil Shells,' but no description accompanies that engraving. The cited figure of Ledermuller exhibits the general aspect of the example in the collection, but is so rude as to be irre-cognisable.

## ***Nautilus raphanus.***

Martini's copies (Conch. Cab. vol. i. vignette 1, fig. A, B, C) of the cited engravings of Gualtier are referred to in the revised 'Systema.' Both are quoted by Lamarck in his synonymy of *Orthocera raphanus*. Our author has indicated his possession of the species in his copy of the tenth edition of the 'Systema,' and a specimen which alone answers to the description is still to be found in his cabinet. It is not unlike the figures in Gualtier and Martini, but is less pointed, and, in accordance with the description, has the siphon less central than depicted in those engravings.

## ***Nautilus granum.***

Although described at some length, it does not seem that this species, which, from its declared resemblance to *raphanus*,

apparently belongs to the same genus with it, has ever been recognised; at least I do not find any further account of it in any of the works I have been enabled to consult: yet, from the details mentioned, and the limitation effected by the authenticated locality, its accurate determination may be reasonably expected. Nothing, however, in either the cabinet or the manuscripts of Linnæus dispels the obscurity in which it is at present involved.

### ***Nautilus radícula.***

Martini's copies (Conch. Cab. vol. i. vign. 1, fig. G, G, g.) of the illustrative figures in Plancus are added to the synonymy in the revised copy of the 'Systema;' the originals have been referred to by Lamarck as illustrative of his *Nodosaria radícula*.

The figures *e* and *r* of Ledermuller are copied from those cited in Plancus.

### ***Nautilus fascia.***

Martini's copies (Conch. Cab. vol. i. vign. 1, fig. D, d.) of Gualtier's cited engravings are also referred to in the proposed new edition of the 'Systema.' These figures have been likewise quoted by Lamarck in his synonymy of *Orthocera fascia*.

### ***Nautilus siphunculus.***

Martini's copies (Conch. Cab. vol. i. vign. 1, figs. F, f.) of Gualtier's referred-to figures are added to the synonymy in the revised 'Systema.' These engravings have been quoted by Lamarck for his *Nodosaria siphunculus*.

## **Nautilus legumen.**

Ledermuller's engravings, only referred to in the final edition, were taken from the cited ones of Plancus, from which the figures *E*, *e*, of the first vignette in Martini's 'Conchylien Cabinet' (vol. i.), which are annexed to the synonymy in the revised 'Systema,' were likewise copied. These illustrations, as well as the cited one of Gualtier, have been quoted by Lamarck for his *Orthocera legumen*.

## **Nautilus orthocera.**

The long list of localities, inserted by Linnæus in the 'Museum Tessinianum,' is not devoid of utility; since, coupled with the circumstance of the indicated "Alveolus," it has furnished us with a clue to the species intended by our author. It appears that the only two *Orthoceratites* provided with an *alveolus* (the siphuncle) to be met with in the enumerated districts are the *O. duplex* and the *O. vaginatus*, to the latter alone of which (delineated by De Verneuil in Murchison's work on Russian fossils, pl. 24, f. 6) can the "carinato-striatis" of the description be applied. That fossil may, consequently, be regarded as the *Nautilus orthocera* of Linnæus.

I am indebted to Mr. Salter for the above information.

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## **C O N U S .**

### **Conus marmoreus.**

The *Conus marmoreus* (Knorr, Délices, pt. 1, pl. 15, f. 2) of authors is marked for this species in the Linnean cabinet.

“List. 787” is added by Linnæus in his revised copy of the ‘Systema.’ The letter I in the reference to Rumphius (in the tenth edition only) is a misprint for No. 1, which is not unlike *Bandanus*, but has been cited for a variety of *marmoreus* by Bruguière, &c. The synonymy is otherwise correct: Seba’s figures and the larger D of Gualtier exhibit that form in which the coronation is almost obsolete.

### ***Conus imperialis.***

The *Conus imperialis* of authors (Reeve, Conch. Icon. vol. i. Con. f. 60) is marked for this species in the Linnean cabinet. The younger Linné has erased the letter I from the reference to Rumphius, and the engraving of Regenfuss is usually cited for *C. viridulus*; otherwise the synonymy is correct. “Mart. Conch. 2, t. 62, f. 690, 691,” has been added in the copy that belonged to the younger Linné.

### ***Conus litteratus.***

Seven varieties of this shell are enumerated in the ‘Museum Ulricæ,’ and three distinct species are cited in the synonymy of that publication. The synonymy of the ‘Systema,’ and the expression “fasciis obsoletis flavis,” limit the variations in some small measure, yet it is clear that Linnæus comprehended several distinct species under one appellation. The 15 Q. of Argenville, generally quoted for *papilionaceus*, but referred to this *Cone* in the ‘Museum’ and the earlier edition of the ‘Systema,’ has been omitted in the final one, where, nevertheless, the following species are included by the references: *C. litteratus* of authors (Rumph.—Bon. 363—Regen. f. 46—Gual. 21, O); *C. millepunctatus* (Regen. f. 29); *C. eburneus* (Arg. f. I,—7 is a typographical mistake—Gual. f. G.). An irrecongnisable figure of Bonanni (132, only added in the twelfth edition), and Gualtier, pl. 21, f. G. (usually quoted for *C. fustigatus*) complete the synonymy. Naturalists have wisely selected the first of these shells, which agrees correctly with the description, because the delineations of it are not only much more numerous,

but decidedly more accurate and distinguishable; the name "letter-hoorn" was, moreover, attached to the cited figure of Rumphius. That shell, too, (Encycl. Méth. Vers. pl. 323, f. 4) may be still seen in the Linnean collection, but the name is only written on it with plumbago, a mode adopted by Sir J. Smith, when he himself identified a specimen that he found unmarked in the typical collection.

### **Conus generalis.**

This shell was originally regarded by Linnæus as a variety of *capitaneus*. So correct a synonymy, however, was attached to the account of it in the final edition of the 'Systema,' that naturalists have identified the object intended with great facility. No specimens whatsoever were delineated in the two hundred and seventy-sixth copper-plate of Lister's 'Historiæ,' which merely contains the divisional arrangement of his fourth section. Figure 35 belongs in truth to plate 786, and has been thus corrected by the younger Linné, whose father has detected and erased the obnoxious 276 in his revised 'Systema.' The *Conus generalis* of authors (Reeve, Conch. Icon. vol. i. Con. pl. 10, f. 48) is still preserved in the Linnean cabinet, and alone agrees with the combined description and synonymy of the species. "Muricata" was a typographical error for "mucronata," and has been thus corrected by our author in his own copy: "Mart. Conch. 2, t. 58, f. 645, 6," is added as a synonym by the younger Linné.

### **Conus virgo.**

The language and synonymy of the tenth edition of the 'Systema' alike prove that two very dissimilar species, both of which are still preserved in his cabinet, the *C. tessellatus* (Regenf. pl. 8, f. 19) and *C. virgo* of authors (Rumph. pl. 31, E, not K, as misprinted—for there is no such letter in that plate—in the twelfth edition) were included under this designation. The reference to Gualtier, which was not inserted in the

earlier edition, is erroneous ; his figure looks more like *quercinus* in shape, and does not correspond to “basi semper violacea.” As Regenfuss’s painting of *C. tessellatus* has not been cited, and the expression “rubro maculata” has been omitted in the ‘Museum Ulricæ,’ the species delineated by Rumphius has been universally adjudged to merit, in preference, the Linnean appellation.

### ***Conus capitaneus.***

When Linnæus separated the previously confused *C. generalis* from this very different species, he left the specific diagnosis as it originally stood, with both “basi fusca,” and “spira convexuscula” included. The latter expression was, indeed, more appropriate to the shell generally accepted for *capitaneus* ; the former character belongs to *generalis* exclusively. The synonymy of the ‘Museum Ulricæ’ pertains to the *capitaneus* of authors ; not so the description, which is better adapted for *generalis*. The synonyms of the twelfth edition of the ‘Systema’ point, in the main, to the shell traditionally selected as its representative, and that species (Reeve, Conch. Icon. vol. i. Con. f. 54) is still preserved in the Linnean cabinet, but with the name only appended in pencil-writing. In citing the works of our author, the reference must be solely to the final edition of the ‘Systema,’ and that with “in part” annexed to the reference. The indicated colour (“cæsia,” that of a cat’s eye) is peculiarly suited to the shell selected ; and the addition of “List. 780” to the synonymy in the revised copy favours the received opinion. However faulty was the synonymy of the tenth edition, it was rendered still worse in the twelfth, by too indiscriminate a citation of Seba’s engravings : figures 23 to 25 of plate 42, in that bulky volume, represent, and are again quoted for, the next species ; 32 is more like *Sumatrensis* ; 35 to *mustelinus* ; 28, 29 alone are designed for *capitaneus*. The K in the reference to Rumphius was a misprint for X, which represents *capitaneus*, and was so quoted in both the earlier edition and in the ‘Museum Ulricæ.’



### **Conus miles.**

The *Conus miles* of authors (Reeve, Conch. Icon. vol. i. Con. f. 9) is still preserved in the box thus marked in the Linnean cabinet, and alone agrees with the combined synonymy and description of this species. The cited engravings of Seba and Rumphius decidedly represent the shell; that of Argenville is very like it, and has been generally quoted for it, yet the spire seems a little coronated. Linnæus has correctly cited "List. 786, f. 34," in his revised copy, and his son has likewise added "Mart. Conch. 2, t. 59, f. 663, 4."

### **Conus princeps.**

Linnæus did not himself possess this shell, but described it from a specimen in the 'Museum Ulricæ.' That example has been examined by the celebrated Cuming, and proves to be the *C. regius* of authors, a shell figured by Reeve under its ancient appellation in his 'Conchologia Iconica' (vol. i. Con. f. 36, a). Bonanni's indicated sketch reminds one of the markings in *princeps*, but was probably meant for *vermiculatus*; it is very ill executed.

### **Conus ammiralis.**

The well-known *Admiral Cone*, that "luxus ignorantiae" as it is somewhat scornfully termed by Linnæus in his own copy of the 'Systema,' is still preserved (Chemn. Conch. Cab. vol. x. pl. 141, f. 1307, 1308, but larger) in the Linnean cabinet, and alone agrees with the combined descriptive and pictorial account of this species. "Malé" was justly appended to the synonym of Petiver, whose engraving does not represent this exquisitely marked shell, but bears more resemblance to *Conus raphanus*. In the copy of the 'Systema' that belonged to the

younger Linné, "Knorr, 4, t. 3, f. 1," and "Mart. Conch. 2, t. 57, f. 635," have been cited as illustrative. The stated locality is erroneous; it is an Oriental shell. The variety *e*, which was not specified in the tenth edition of the 'Systema,' is the *C. cedo-nulli* of authors.

### **Conus vicarius.**

Unfortunately for science, Linnæus did not himself possess this obscure species, which being described in but two lines, and so characterised "fasciis 4, flavis, *immaculatis*" as not to correspond with the cited delineation, cannot be positively determined, and must consequently be omitted from the catalogue of Linnean species. The referred-to figure of Argenville represents a variety of *ammiralis*; hence the *vicarius* has been ascribed to that shell by some writers: the younger Linné has attached it to the supposed variety *cedo-nulli*. The *C. vicarius* of Lamarck's 'Animaux sans Vertèbres' is perfectly distinct, and does not purport to be identical.

### **Conus senator.**

I do not find this *Cone* enumerated among those possessed by Linnæus. His meagre description, unfortunately, being equally applicable to more than one species, the loose verbal definition, not being limited by any illustrative reference, will not permit of any absolute certainty of identification. A spotted variety of the *Conus planorbis* of Born (Test. Mus. Vind. pl. 7, f. 13, the *C. vulpinus* of Bruguière), with articulated fillets, has been accepted for its representative by many conchologists, and agrees extremely well with the few features that have been specified by our author. And in confirmation of the correctness of the supposition, I observe, in the copy of the 'Systema' that belonged to the younger Linné, a reference to plate 59, f. 659 of the second volume of Martini's great work, a painting which is habitually quoted as a representation of that shell.

## **Conus nobilis.**

The more detailed account of this species in the 'Museum Ulricæ' enabled naturalists to identify this well-known and beautifully painted *Cone*, a specimen of which (*Conus nobilis*, Reeve, Conch. Icon. 1, Con. f. 2, c) is still preserved in the cabinet of Linnæus, and perfectly agrees with the described features. The cited engraving of Argenville communicates a general idea of the markings of the shell, yet the shape not being depicted as subcylindric, it cannot be safely quoted for it; as corrected, however, by Favanne (pl. 14, f. E, 2) it becomes an undoubted delineation of the species. The citation of "Mart. Conch. 2, t. 62, f. 689" by the younger Linné supports the received opinion. Our author intended to have added "anfractus canaliculati" to the brief definition of the 'Systema.'

## **Conus Genuanus.**

This peculiarly marked *Cone* was pictorially defined in the tenth edition of the 'Systema' by an excellent figure of Rumphius, from whom the name was taken, and an almost irrecognisable drawing of Bonanni, which is not so unlike it in painting, but has too elongated a contour. In the twelfth edition of the same work, an engraving of Argenville, which has likewise been referred to the species by more modern conchologists, has been added to the synonymy, as illustrative of the variety *b*; it is, however, a somewhat questionable representation, and reminds us a little of the *Conus regularis*. Of the many quoted drawings in Seba, plate 48, f. 1, 2, 3, although placed, not improbably by some typographical error, after the variety, exhibits a typical *Genuanus*; the other figures (pl. 44, f. 1 to 4 and pl. 44, f. 5) belong to *betulinus* and *papilionaceus*.

The example of *Conus Genuanus* (Reeve, Conch. Icon. vol. i. Con. f. 81) in the Linnean cabinet did not belong to the Swedish naturalist, who has not recorded his possession of the species, but was added to the collection by Lord Valentia. Plate

769 of Lister's 'Historiæ' is quoted as illustrative in the revised 'Systema,' and "Mart. Conch. 2, t. 56, f. 623, 625" in the copy that belonged to the younger Linné; both these references corroborate the received identification. The *Cone* thus named in the 'Museum Ulricæ' was apparently a different species; at least the partial canaliculation of the spire there alluded to, and the expressions "flava, maculis albis," &c., do not suit any example of the true *Genuanus* that has been examined by myself.

### ***Conus glaucus.***

This *Cone*, being one of those which our author has not enumerated as being in his possession when he wrote the 'Systema,' is absent from his cabinet. It was pictorially defined by the figure of Rumphius, which harmonises with the few characters specified in the brief description, and is clearly the *Conus glaucus* of modern writers (Reeve, Conch. Icon. vol. i. Con. f. 10). The shell is described at large in the 'Museum Ulricæ,' where the details fully confirm the conclusion deduced from the combined diagnosis and reference in the 'Systema.'

### ***Conus monachus.***

Since the beautiful figure of Regenfuss clearly represents that *Cone* which has been generally recognised for the *Conus monachus* (Reeve, Conch. Icon. vol. i. Con. f. 122), and agrees fairly with the language of both the 'Systema' and the 'Museum Ulricæ,' whilst the other engravings referred to in the synonymy bear a certain amount of resemblance to the species, although what they may have been designed for is most uncertain, it is not desirable to disturb the received opinion. Nevertheless the expression "magnitudine glandis" (M. U.) is indicative of a smaller species, and the term "acuta" is scarcely applicable to the spire of *monachus*. Yet Linnæus may have merely sought to contrast the elevation of that part with its depression in the preceding shell; and mere size is never a

safe criterion for specific distinction. The identification must be confined to the species of the 'Museum Ulricæ,' since the *Cone* preserved in the box thus marked in the Linnean collection (where *monachus* is not present) is a large worn individual of the *C. Mediterraneus* of authors, and being correctly described was doubtlessly intended by the 'Systema.' Nevertheless, since that shell is not hinted at in the synonymy, and the description was utterly inadequate, it can have no claim to the Linnean appellation: it has not the striated spire of the *monachus* of the 'Museum Ulricæ.'

### *Conus minimus.*

"La Minime" of Argenville, the sole figure referred to, is manifestly the *Conus figulinus*, a shell which does not even answer to the single line of description in the 'Systema,' far less to the details of the 'Museum Ulricæ.' The features enumerated in that work are not sufficient to distinguish a member of so large a genus as *Conus*; hence any supposed determination of the species should be modified by a "probably" appended. It is to be regretted that Linnæus did not himself possess this species, since his specimen might have cleared up the obscurity.

In modern works we find a *Conus minimus* (Reeve, Conch. Icon. vol. i. Con. f. 143) supposed by Hwass to be identical, but upon what grounds I cannot understand. Its shape is conic rather than "ovata," its spire is coronated, a feature which, although not regarded by our author as of essential importance, was always specified by him when present; the series of spiral lines, instead of exceeding thirty ("plus 30 ex lineis fuscis") (M. U.) rarely even reach to that number, more frequently, indeed, are only twenty: the veritable colouring, moreover, would be ill expressed by "glauco sordidoque nubilata" "spira-maculis fuscis magnis transversis." In nearly all these particulars the *Conus magus* approaches far nearer to the description, and that shell is suggested by the synonymy added in the copy that belonged to the younger Linné (Knorr, 3, t. 27, f. 2: 5, t. 25, f. 5. The first of these references has been quoted by Born in the synonymy of his ideal of the Linnean

species: from the “*variat spira coronata*” we learn that his type, at least, was not identical with the modern *minimus* (*coronatus* of Dillwyn).

The name *minimus* (least) misleads one: it was intended for a translation of “*la Minime*,” the meaning of which latter may, perhaps, be understood by Gersaint’s earlier name *Cuculla Minimorum* (*Franciscanorum*).

### ***Conus rusticus.***

Not one of the three most dissimilar figures that are cited in illustration of this obscure species corresponds with the description. That of Rumphius, usually ascribed to *cinereus*, is at variance with the diagnosis in shape and in the absence of the required basal murication; that of Gualtier, apparently taken from a much worn shell, that cannot be positively determined, yet has somewhat the aspect of *magus* or *achatinus*, suits not the expression “*livida, fascia albido-nebulosa*,” that of Argenville, equally uncertain with the last, though it has been quoted for *classarius*, and having the aspect of a smooth polished specimen, with a conic shape, is opposed to both “*ovata*” and “*muricato*.” The box marked for this species in the Linnean cabinet accounts for the “*bene*” which was appended in our author’s copy to the last-named reference. It contains a lathe-polished specimen of *classarius* that looks precisely like Argenville’s figure, and was probably supposed by Linnæus to be the uncoated state of one of the two shells, *C. flavidus* and *C. lividus*, which accompany it: the confusion of these two *Cones*, which in general aspect much resemble each other, is explained by the note immediately beneath the species in the ‘*Systema*,’ wherein coronation is declared to be a mere varietal, not a specific, distinction. As to figures, it would have been very difficult, judging from the published synonymies, to have discovered any delineation of those *Cones* in the works habitually consulted by the illustrious Swede. Possibly *lividus* was the coronated variety (not the typical form) alluded to in the concluding paragraph of the description of the species in the ‘*Museum Ulricæ*,’ it appears to be the *rusticus* of Kammerer.

Whether Linnæus constructed his *Conus rusticus* from the combined characters of these two shells is less important to ascertain, from the circumstance that the name could not in any case be retained for the species of the 'Systema,' the description in that work being manifestly inadequate for purposes of definition, and the synonymy actually deceptive. The *C. rusticus* of the 'Museum Ulricæ,' where no murication is mentioned among the details, appears to be a different shell; yet the previous synonymy has been retained, and though the figures of Argenville and Rumphius are still opposed to its altered style of colouring, "alba longitudinaliter nebula flava et glauca," the synonym of Gualtier, supposing his drawing to have been designed for *magus*, may, perchance, be not an incorrect one, since the account of the species in that work is fairly applicable to the *magus* of authors. Nevertheless, I would follow Deshayes in wholly suppressing so conjectural a species.

### ***Conus mercator.***

The *Conus mercator* (Reeve, Conch. Icon. vol. i. Con. f. 83, b) of authors was found wrapped up in a paper thus inscribed in the Linnean collection, to which, in all probability, it was a subsequent addition, since its presence is not recorded in the several lists of species possessed by Linnæus. The authority of the specimen, however, matters but little, since the entire synonymy, with the exception of Lister's plate 758 (which has been rightly erased in the revised copy of the 'Systema,' for it presents not the slightest resemblance to the species), harmonises with the description, and clearly points out the *Cone* to which the appellation has been universally assigned; and this decision was fully supported by the language of the 'Museum Ulricæ.' "Mart. Conch. 2, t. 56, f. 619, 620" is added in the copy that belonged to the younger Linné.

### ***Conus betulinus.***

The *Conus betulinus* of authors (Mart. Conch. Cab. vol. ii. pl. 60, f. 665) is marked for this species in the Linnean cabinet,

and Martini's figure, here mentioned, is cited in illustration by the younger Linné. The reference to Seba, as was usual, is too comprehensive, his figure 1 being *millepunctatus*: his 2 and 3, likewise, are far from characteristic. The somewhat rude engraving of Olearius can scarcely be pronounced with positiveness to be intended for *betulinus*; yet it is not unlike it. The other synonyms are correct.

### **Conus figulinus.**

Had no account of this peculiar-looking *Cone* appeared in the 'Museum Ulricæ,' it might have been doubtful whether the *C. quercinus* were not entitled to the appellation, since the cited figure of Rumphius was clearly designed for that shell (33, No. 1 is *figulinus*), and the brief diagnosis in the 'Systema' was at least equally applicable to it. The description of the spire in that work, however, ("Spira ferruginea, convexa, basi rotundata, sensim mucronata, anfractibus 11 seu 12") sets the question at rest. Regenfuss has correctly delineated a pale specimen ("pallidus cinctus lineis testaceis," M. U.) of the true *figulinus*, which species (Reeve, *Conch. Icon.* vol. i. *Con.* f. 160) is still preserved in the Linnean cabinet. "Mart. *Conch.* 2, t. 59, f. 656, 658," and "Seba, 3, t. 54, f. 1, 2, 3, 4" are added in the copy of the younger Linné. That Regenfuss's engraving has not been referred to in the 'Museum Ulricæ' is not singular, inasmuch as his beautiful paintings were never once cited in that work. Rumphius, Argenville, and Gualtier, form the great staple of its synonyms; Seba is quoted seventeen times; Lister's 'Angliæ' nine times; Bonanni and Petiver six or seven times; 'Acta Angliæ' four times; Klein and Ginanni twice; Adanson, Lister's 'Conch.,' Baster's 'Mis.,' Browne, Plancus, and the 'Mus. Tessin.' once only. The relative frequency of our author's consultation of these works may affect the relative authority of antagonistic synonyms.



### **Conus Ebræus.**

An early recognition of this *Cone* ensued from the copiousness of the synonymy and the language of the 'Museum Ulricæ.' The "varietas maculis ramosis gaudens" (M. U.) is the *vermiculatus* of authors, and to that shell belong the references "List. 779, f. 26," and "Gualt. 25, Q." Seba, 47, f. 29 is not characteristic: the other engravings that are cited by Linnæus correctly represent the *Conus Ebræus* of authors. Specimens of both this (Reeve, Conch. Icon. vol. i. Con. f. 104, b) and *vermiculatus* are preserved in the Linnean collection, and alone agree with the description and synonymy.

### **Conus stercus-muscarum.**

The box marked for this shell in the Linnean cabinet holds the *Cone* habitually recognised for this species (Mart. Conch. Cab. vol. ii. pl. 64, f. 711, 712), and the *C. arenarius* likewise. Both, indeed, were confused in the synonymy, and the language of both the 'Systema' and the 'Museum Ulricæ' is quite as applicable to the latter as to the former. Nevertheless, as no coronation is mentioned, the somewhat arbitrary decision that favoured its uncrowned rival was not wholly unreasonable. Of the engravings referred to, three only (Argenville, Rump. AA, and Gualt. P.) absolutely indicate *arenarius*; Seba's group, No. 1, contains both forms; Regenfuss, Rump. Z, Gualt. O, and perhaps Petiver also, represent the *stercus-muscarum* of authors; Gualt. N. (rather an uncertain figure) was not intended for either of the two. "Mart. Conch. 2, t. 64, f. 711, 712" has been annexed to the synonymy in the copy that belonged to the younger Linné.

### **Conus varius.**

The language of the 'Museum Ulricæ,' combined with the figure of Argenville, clearly distinguished the species intended

by Linnæus. An example of that shell (*Conus varius*, Reeve, Conch. Icon. vol. i. Con. pl. 12, f. 58) is present in the Linnean cabinet, but was apparently added subsequently to the publication of the 'Systema,' since it is not mentioned by our author as having been in his possession.

### **Conus clavus.**

The correctness of the ordinary identification (*Conus clavus*, Reeve, Conch. Icon. vol. i. Con. f. 194) is supported by the following synonymy attached to this species in the copy of the younger Linné: "Mart. Conch. 2, t. 52, f. 570." "List. Conch. t. 744, f. 34." This shell was not possessed by Linnæus, who has not added to his published description.

### **Conus Nussatella.**

"List. 744, f. 35" is the amended reference in the Linnean copy of the 'Systema.' The synonymy, thus changed, becomes correct; "Mart. Conch. 2, t. 51, f. 567" was annexed to it by the younger Linné. The *Conus Nussatella* of authors (Reeve, Conch. Icon. vol. i. Con. f. 56) is still preserved in the cabinet of Linnæus, and alone answers to the combined descriptive and pictorial definition.

### **Conus granulatus.**

In the box thus marked in the Linnean cabinet is still preserved a richly coloured specimen of the *Conus granulatus* of authors (Mart. Conch. Cab. vol. ii. f. 574, 575): neither the cited figure of Rumphius nor of Gualtier correctly represents the species; yet, although the characteristic sulci are omitted, one is still reminded of it by them. It appears somewhat strange that Linnæus did not refer to Lister (760, f. 5); he had not, however, a copy of that work in his library when he constituted the species.

### **Conus aurisiacus.**

The harmonious correctness of the synonymy of this scarce species, which Linnæus did not himself possess, pointed it out so unmistakeably (*Conus aurisiacus*, Reeve, Conch. Icon. vol. i. Con. f. 29), that it was identified at a very early period. "Mart. Conch. 2. t. 57, f. 636, 7," was rightly referred to by the younger Linné.

### **Conus magus.**

The *Conus magus* of modern writers (Reeve, Conch. Icon. vol. i. Con. f. 190, d.) agrees fairly enough with the language of the 'Museum Ulricæ,' so that the traditional representative may not unfittingly retain its appellation. The synonymy, however, is wholly erroneous. For want of characteristic representations our author was forced to refer to any which approached in general features; hence in his 'Systema' he has quoted 32, Q of Rumphius (*C. augur*), which exhibits the bands; in his 'Museum Ulricæ' 34, A, (*C. Aurisiacus*) which displays the articulated painting of the object intended. The coronated *Cone* (*aurantius?*) depicted by Gualtier, and doubtfully cited in the 'Systema,' is very properly omitted in the 'Museum.' In the latter publication, the same figure (pl. 15, f. H.) of Argenville, which had already been cited for *vicarius* in the twelfth edition of the 'Systema,' has been erroneously quoted for the species under consideration: it is a very decided representation of *C. ammiralis*. Seba's drawing, like the rest of those referred to, does not exhibit the described features; but our author perhaps intended to indicate the one which stands next to it in the same plate (an accurate delineation of the recognised *magus*); such carelessness of transcription not being of infrequent occurrence with him, more especially in regard to the costly folios of Seba, which formed no portion of his own library.

### **Conus striatus.**

The *Conus striatus* of authors (Knorr, Délic. Yeux, pt. 3, pl. 22, f. 4) is thus named in the Linnean cabinet. The excellent description in the 'Museum Ulricæ,' where the synonymy (as likewise is the case in the tenth edition of the 'Systema') is perfectly correct, ensured the early determination of the species. The additional references in the final edition of the 'Systema' are wrong; Lister, Adanson, and Seba, f. 7, 10, not being intended for *striatus*; figures 8, 9, however, of the last-named author, really represent the shell in question. The younger Linné has added "Mart. Conch. 2, f. 714—716" in his own copy, and erased the faulty reference to Adanson.

### **Conus textile.**

It is manifest, from the language of the 'Systema' and the 'Museum Ulricæ,' that the shells ordinarily termed "Cloth of Gold Cones" formed the Linnean ideal of this species. Hence the references to Gualtier, f. X, and to Seba f. 10, 11 (quoted for *C. auratus* and *C. aulicus*) must be ejected from the synonymy: both possibly were carelessly placed here, instead of with the next species; Seba assuredly was a transposition for 14, 15 (*textile*), which was negligently ascribed to *aulicus*.

The *Conus textile* of Bruguière and Lamarck (Reeve, Conch. Icon. Con. f. 209) has with reason been accepted as the typical Linnean shell, a view as well confirmed by the cabinet of our author, where two varieties of it are present, as supported by a critical scrutiny of the synonymy. Gualtier A.A. is a characteristic representation of it; Regenfuss has delineated that loosely reticulated form that links it to *verriculum*; Bonanni (whose drawing is execrable) seems likewise to have intended it; the figure P of Rumphius, and the I of Argenville (the latter, however, has been ascribed to *archiepiscopus* by Bruguière) bear much resemblance to it. There remains only the figure O of Rumphius to be disposed of; it is not *textile*

certainly, and is not improbably what was designed by the “*varietas parva, magis cylindrica, lineolis tenuissimis reticulatis*” (M. U.).

### **Conus aulicus.**

The entire synonymy of this species is a tissue of confusion. Seba's delineations of this and the preceding shell have been transposed in the references; f. 10, 11, of plate 47, being evidently *aulicus*, whilst f. 14, 15, are clearly *textile*. The following species are included in the synonymy, and agree nearly equally well with the language of the ‘Systema.’

*C. aulicus* of authors (Reeve, Conch. Icon. vol. i. pl. 24, f. 134). Arg. 16, G.; Gualt. 25, Z; Regen. 8, f. 25; Seba, 43, f. 1, 2 (and by transposition 47, f. 10, 11).

*C. episcopus*. Gualt. 25, V.; Bon. 3, f. 133?

*C. pennaceus*. Rump. 33, f. 4, has been quoted by Lamarck for *pennaceus*; it seems equally like *episcopus*.

*C. auratus*. Seba, 43, f. 4, 5.

*C. omaria*. Seba, 47, f. 13.

Of these the first has been selected by naturalists as typical, not alone on account of the much greater number of the cited delineations of it, but from the circumstance, likewise, that *auratus* and *omaria* had been only included in the twelfth edition, where *pennaceus* (?) too had been ejected. The figure which represents the only remaining claimant of the appellation is erased in the copy that belonged to the younger Linné.

Since the established opinion has been based upon rational grounds of credence, it is scarcely desirable to disturb it. Nevertheless, the language of the ‘Museum Ulricæ,’ where figures of *aulicus*, *pennaceus*? and *episcopus* are cited, applies far better to the last-named species; the expression “*obovata-subcylindrica*” being inapplicable to the *aulicus* of authors.

No marked box or inscribed specimen is preserved in the Linnean cabinet.

### **Conus spectrum.**

No *Cone* possessed by Linnæus agrees with the definition of this shell; the *spectrum* of authors is not present in his cabinet. The synonym of Regenfuss is clearly erroneous; it suits not the indicated colouring “flavo nebulosa,” and, moreover, has been rightly quoted by our author for his *Conus tulipa*. The cited figure of Gualtier represents the *C. Janus*; that of Rumphius has been generally quoted for the *spectrum* of authors; the painting of both these species is equally unsuited to the shell described in either the ‘Systema’ or the ‘Museum Ulricæ.’ The details mentioned in the last-named publication (where, as in the earlier edition of the ‘Systema,’ Rumphius and Gualtier alone were cited) are so ample, that it is incomprehensible to me how the *Conus spectrum* of authors (Lamarck, Reeve, &c.) could so long have retained its appellation unquestioned. The description runs as follows: “oblonga, gibba, minus arcte convoluta, albido-cærulescens, nebulosa fasciis longitudinalibus flavis repandis. Striæ coloratæ, plurimæ cingentes ex luteo alboque interstinctæ. Columella postice striata et replicatâ. Intus testa subcærulescens. Spira ascendens, mucronata, mucrone, cingulis granulato.” (M. U.). The articulated spiral lines are not represented in either of the engravings referred to, so that these figures, in all probability, were merely cited as the nearest attainable approximations to the species intended. The description reminds one, in some respects, of *C. achatinus*: it would be hazardous, however, to conjecture what the shell in the Royal Museum actually was; the striated pillar might, indeed, almost induce the belief of its not having been a *Cone* at all. It will be requisite to append a note of interrogation when referring to the works of Linnæus for the traditional *spectrum*.

### **Conus bullatus.**

In the copy of the ‘Systema’ that belonged to the younger Linné, a reference is made to “Knorr, 5, t. 11, f. 4.” This

synonym very decidedly supports the received opinion, which needed some confirmation, inasmuch as Gualtier's figure, though not unlike, can scarcely be positively pronounced intended for the *Conus bullatus* of authors (Reeve, Conch. Icon. vol. i. Con. f. 93), and the account of the spire, in the 'Museum Ulricæ,' hardly answers to that of the shell in question.

Considering that the *bullatus* of authors had been figured by both Argenville (pl. 16, f. H) and Seba (pl. 42, f. 14, 15; pl. 43, f. 15, 16), it is passing strange that Linnæus has not cited them. He did not himself possess the species, so that its absence from his collection favours rather than discountenances the established determination.

### **Conus tulipa.**

Three very distinct species, *Conus achatinus* (Argen.—Rump. L.), *C. testudinarius* (Rump. K.), and the *C. tulipa* of authors (Seba and Regenfuss), are confused in the synonymy of both editions of the 'Systema,' and answer nearly alike to the few requirements of the diagnosis. As the name itself was taken from that applied by Argenville to the first of them, and the preponderance of synonyms in the tenth edition (where Seba was not quoted) likewise favoured *achatinus*, to which the important "Simillimus geographo" in the concluding remarks served as a counterpoise, the absence of *achatinus* and the presence of the traditional *tulipa* (Sow. Conch. Ill. Con. f. 91) in the collection of our author, who has recorded his possession of the species, and the circumstance that Martini's figures (Conch. Cab. vol. ii. pl. 64, f. 718, 719) of the latter have been referred to as illustrative by the younger Linné, encourage our belief that the delineations of the other *Cone* were merely cited from the general resemblance they exhibited to the real *tulipa*.

### **Conus geographus.**

The *Conus geographus* of authors (Reeve, Conch. Icon. vol. i. Con. f. 130) is marked for this species in the Linnæan cabinet,

and agrees with the several descriptions of it in the works of the illustrious Swede. In his revised copy he has rightly quoted Lister, "Conch. 747;" his published reference had been erroneous. The younger Linné, who has added "Mart. Conch. 2, t. 64, f. 517," has properly erased the faulty synonyms of Adanson and Bonanni. The other references are correct.

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## C Y P R Æ A .

The polished surface of most members of this genus has prevented the permanence of the numerals originally written on the Linnean specimens. This, fortunately, is of less consequence, since the majority were either originally well defined by characteristic representations, or have been illustrated by fresh references in our author's intended new edition. Seba was but sparingly referred to for this genus, owing, possibly, to the increased difficulty of referring to figures which have not any numbers appended to them. When Linnæus, as in citing plate 76 for instance, mentions a numeral, the position of the figure (counting horizontally) upon the plate is alone intended.

### *Cypræa exanthema.*

The well-known *Cypræa exanthema* (Reeve, Conch. Icon. Cyp. f. 16) is marked for this species in the Linnean cabinet. In the revised copy of the 'Systema' there is an erasion of the erroneous reference to Petiver, which had been correctly quoted for *C. mappa* likewise. The synonym of "List. Conch. t. 698, f. 45; t. 699, f. 46," added in the copy that belonged to the younger Linné, indicates more characteristic engravings than those originally published, Regenfuss perchance excepted; for though figure 18 of Seba is not so unlike an immature *exan-*



*thema*, it reminds one also of *cervus*, which Linnæus did not at first distinguish from the present species: as to figure 16 of the same iconography, it must assuredly be expunged from the synonymy, since it bears more likeness to a young *Mauritiana*.

### *Cypræa mappa.*

The *Cypræa mappa* of authors (Sowerby, Conch. Ill. Cyp. f. 70) is marked for this species in the Linnean cabinet, and Martini's figures (i. t. 25, f. 245, 246) of that shell are cited in the revised copy of the 'Systema.' The reference to the 'Gazophylacium' of Petiver (omitted in the 'Museum Ulricæ') must be excluded from the synonymy, the remainder of which is correct.

### *Cypræa Arabica.*

The *Cypræa Arabica* (Sowerby, Conch. Ill. Cyp. f. 2) of authors is marked for this species in the Linnean cabinet. The reference to Seba must be omitted from the synonymy, as the shell (*mappa*) represented by him does not suit the described features. "Pet. Gaz. 53, f. 6" and "Mart. Syst. 397, t. 31, f. 328, 330" are added by Linnæus in his revised copy of the 'Systema.'

### *Cypræa Argus.*

The correctness of the synonymy insured an early recognition for this strongly-featured *Cowry*, of which an example (*Cypræa Argus*, Reeve, Conch. Icon. Cyp. f. 8) is still preserved in our author's cabinet, and alone suits the combined pictorial and descriptive definition. "List. Conch. 705," and "Mart. Syst. 363, t. 28, f. 285, 286," are correctly cited in the revised copy of the 'Systema.'

## *Cypræa testudinaria.*

In addition to the published diagnosis, our author, who did not possess this species, has written in his revised copy "aspera atomis albis," and correctly cited "Mart. Syst. 353, t. 27, f. 271, 272." The species was early recognised (*Cyp. testudinaria*, Reeve, Conch. Icon. Cyp. f. 9) from the details of the 'Museum Ulricæ' and the cited engravings of Rumphius and Petiver. The 6 in the first reference to Lister was a misprint for 9; the second plate referred to contains two young *Cowries* of different species, one of which is usually quoted for *tigris*.

## *Cypræa stercoraria.*

The *Cypræa stercoraria* of authors (Reeve, Conch. Icon. Cyp. f. 15) is marked for this species in the Linnean cabinet. It was originally identified rather by the description than by the synonymy, which latter, as Deshayes has observed, is very faulty, Gualtier f. S, and Petiver f. 8 (the latter of which, quoted likewise by Linnæus for No. 330, has been erased by him in his revised copy) being designed for *Mauritiana*; &c., &c. The references to Columna, to Gualtier f. T, and to Adanson, may be retained as illustrative; the last-named naturalist declares that the example delineated by him is a dwarf specimen, and that the species attains to three inches in length. "Knorr. Conch. 4, t. 13, f. 1" is rightly cited by the younger Linné. There are no shells delineated in plates 1321, 1322 of Barrelier, who, nevertheless, has himself erroneously referred to them, instead of to 1325, 1326. If figures 23, 24 of those plates were meant to have been indicated, they would more aptly have been quoted for *Cypræa tigris*. Plate 687 of Lister's 'Historiæ' seems to have escaped our author's observation: it is a fair enough representation of the species under consideration.

### *Cypræa carneola.*

A reference to the first volume of Martini ("t. 28, f. 287, 288") in the revised copy of the 'Systema' confirms that determination of the species which had been arrived at by naturalists from the figure in Rumphius, and the perusal of the 'Museum Ulricæ,' a decision corroborated by the younger Linné, who has rightly quoted "List. Conch. t. 664, f. 8" as illustrative. Although specimens are to be found (Sow. Conch. III. Cyp. f. 165) in the Linnean cabinet, they cannot be regarded as of authority, since the presence of the species is not asserted in our author's list of his *Testacea*. The shell figured by Petiver is a young *Cowry*, which reminds one of *carneola* in marking, though probably not designed for that species: it was not referred to in the 'Museum Ulricæ.'

### *Cypræa zebra.*

A not perfectly mature example of the *Cyp. exanthema* (Sowerby, Conch. Illus. Cyp. f. 6, a) is marked for this species in the Linnean cabinet. This circumstance confirms the conclusion arrived at by Deshayes, &c., from the published synonymy. Seba and Bonanni represent the shell in question; Argenville's drawing is less satisfactory.

### *Cypræa talpa.*

The *Cypræa talpa* of authors (Kiener, Coq. Viv. Cyp. pl. 12, f. 2) is marked for this species in the Linnean cabinet. Plate 27, f. 273, 274 of the first volume of Martini's Conchology is correctly cited, and the erroneous reference to Lister erased in the revised copy of the 'Systema.' The figure of Barrelier (*Arabica*) suits not the description, and must be omitted from a synonymy which is otherwise correct. Perhaps when originally referring to the old edition of Lister, our author may not

have meant to cite the third copperplate (for, being small, several of these are printed on the same page), but the third page of engravings, where, among other shells, *talpa* is also represented.

### *Cypræa amethystina.*

An example of the *Cypræa reticulata* (Knorr, Dél. Yeux, pt. 3, pl. 2, f. 2) the *C. histrio* of authors, having the outer coating of the dorsal surface artificially removed, is marked for this species in the Linnean cabinet. The synonymy is inaccurate; the cited engraving of Petiver (plate 32, f. 10) represents a botanical specimen.

### *Cypræa lurida.*

“Pet. Gaz. t. 52, f. 10” and “Mart. Syst. t. 25, f. 247, 249” are added to the synonymy in the revised copy of the ‘Systema’ prepared by Linnæus. These fresh references are perfectly harmonious with the published ones, with the description, and with the assigned locality: Gualtier, however, has only depicted the characteristic spots at one end of his shell, which was clearly drawn from an immature example. Specimens of the *Cypræa lurida* of authors (Reeve, Conch. Icon. Cyp. f. 32, a) are still preserved in the Linnean cabinet, and alone agree with the combined pictorial and descriptive definition.

### *Cypræa Vanelli.*

A young *Cypræa lynx* (List. Hist. Conch. pl. 684) is marked for this species in the Linnean cabinet, and thus confirms the conclusion arrived at by Deshayes, &c. from the study of the ‘Museum Ulricæ.’ The references made by the younger Linné to figures 230, 231 of Martini’s first volume, and to Knorr “4, t. 9, f. 6,” support the received opinion. The published

synonym of *Petiver* (his "small yellow speckled Barbadoes Cowry") reminds one somewhat of the shell, but has not been usually quoted for it.

### *Cypræa lota.*

Our author did not originally possess this shell, which, judging from its position between *Fanelli* and *fragilis*, as well as from the language of the 'Museum Ulricæ,' was an immature *Cowry*. The account in the 'Systema' is utterly inadequate for the purposes of definition; even the description in the 'Museum,' although much more detailed, has not enabled naturalists, in the absence of an illustrative figure, to pronounce with any confident certainty upon the species. There is a *Cypræa* in the Linnean cabinet which is marked with the numerals indicative of the species (337); it possesses the very few characters mentioned in the 'Systema,' and answers fairly enough to the description in the 'Museum Ulricæ:' the specimen, however, in the Dronningen Museum must be regarded as the original type. What it may prove I know not: that in the cabinet of Linnæus seems merely a young *spurca*.

### *Cypræa fragilis.*

Deshayes has justly observed that a careful perusal of the account of this shell in the 'Museum Ulricæ' must lead to the conclusion that Linnæus thereby intended an immature example of the *Cyp. Arabica*. The cited illustration in Gualtier depicts that *Cowry*, and an analytical examination of our author's cabinet (its presence in which has been expressly recorded) demonstrates, that of all his specimens that shell (Gualt. pl. 16, Q) alone fulfils the required conditions of the definition.

### *Cypræa caput-serpentis.*

The *Cypræa caput-serpentis* of authors (Reeve, Conch. Icon. Cyp. f. 44) is marked for this species in the Linnean cabinet. In the revised copy of the 'Systema' 704 has been substituted for the previous imperfect and circuitous mode of reference to Lister; in the copy that belonged to the younger Linné, figure 316 of Martini's thirtieth plate, and plate 702 of Lister's 'Historiæ' have been accurately cited. The plate referred to in Petiver's Amboyna shells should have been 16, not 12, and in the synonym of Adanson, the letter G (the fifth species in position must replace the "5"), there being no such numeral attached to any of the drawings. Should Gualtier's figure O be designed for this species, it is a very unsuccessful representation of it: Rondelet's woodcut is far more characteristic.

### *Cypræa Mauritiana.*

The *Cypræa Mauritiana* of authors (Sowerby, Conch. Ill. Cyp. f. 164) is marked for this species in the Linnean collection. The reference to Lister should have been to plate 13, not 8; the latter represents *exanthema*, which accords not with the description. The synonymy is otherwise correct.

### *Cypræa vitellus.*

The *Cypræa vitellus* of authors (Sowerby, Conch. Ill. f. 66) is marked for this species in the Linnean cabinet, and the confirmatory synonym of "Mart. Syst. t. 23, f. 228" has been added in the revised copy of the 'Systema,' wherein the reference to Lister has been rightly expunged. The cited drawings of Petiver and Bonanni, and probably, too, of Rumphius, represent this shell: it is difficult, however, to distinguish *melanos-toma* from it in any mediocre engraving.

### *Cypræa mus.*

As the *Cypræa mus* of authors (Reeve, Conch. Icon. Cyp. f. 24) has been delineated by both Seba and Rumphius, the only iconographies cited in the 'Museum Ulricæ,' and the fuller description in that valuable publication harmonised accurately with the shell delineated, that *Cowry* has been justly selected as the representative of the Linnean species. A reference in the revised copy of the 'Systema' to figures 222, 223 of the twenty-third plate of Martini's first volume, supports the received determination. As to the queried engraving in Argenville, it looks much more like *C. onyx*, which is assuredly the *Cowry* delineated by Lister: both references must be ejected from a correct synonymy.

### *Cypræa tigris.*

The *Cypræa tigris* of authors (Sowerby, Conch. Ill. Cyp. f. 90) is marked for this species in the Linnean cabinet. The [confirmatory synonyms of "Mart. Syst. t. 24, f. 232—234," and "Knorr, Conch. 6, t. 21, f. 4," are added in the respective copies that belonged to the father and the son. The references to the letter H of Gualtier's engraving, to 1325 of Barrelier, and to Lister's 681 (the modern numbering), must be suppressed, as they represent the *C. pantherina*: the figure referred to in Petiver should have been 7, not 17. Although *pantherina* was manifestly confused, Linnæus clearly did not regard it as the typical variety, otherwise he would have quoted the figures of it in Martini (235, 236), in Bonanni [(253, 256), in Argenville (21, F), &c.

### *Cypræa lynx.*

The *Cypræa lynx* of authors (Reeve, Conch. Icon. Cyp. f. 33) is marked for this species in the Linnean cabinet. In the

revised copy of the 'Systema' the erroneous reference to Lister has been changed to 684 (this figure represents an immature *lynx*), and "Mart. Syst. t. 23, f. 231" has been rightly added to the synonymy. The cited delineations in Gualtier and Petiver are usually quoted for this *Cowry*: the latter, however, is not characteristic.

### *Cypræa Isabella.*

In the revised copy of the 'Systema' "List. Conch. 660" replaces the former erroneous reference to that work, and "Mart. Syst. t. 27, f. 275" is likewise quoted, and justly so, as illustrative. The synonymy thus amended is correct, and, since it harmonises with the description, no doubt can be felt that the shell represented in the cited engravings (*Cypræa Isabella*, Sow. Conch. Ill. Cyp. f. 98), and of which specimens are preserved in the Linnean collection, was the species designed by our author.

### *Cypræa onyx.*

Deshayes has remarked, that a perusal of the description of this species in the 'Museum Ulricæ' banishes all doubt as to the identity of the Linnean shell with the *Cypræa adusta* of authors. The accuracy of this conclusion is demonstrated by the reference "List. Conch. t. 657, bona," which was written by Linnæus in his revised copy of the 'Systema.' That engraving, indeed, was by far the best representation extant of the shell intended. Gualtier's cited delineation has been generally regarded as designed for the species, and that of Rumphius, although rarely quoted for it in modern works, is not so unlike it. As to the wretched figure in Bonanni, which was not inserted in the synonymy of the earlier edition, it was evidently drawn from a polished specimen of some other *Cowry*, yet reminds one slightly of the present species. "Similis cæterum Capiti-serpentis" has been erased by our author in his revised copy.



The *Cypræa adusta* (Reeve, Conch. Icon. Cyp. f. 39, c) is preserved in the Linnean cabinet, where, with the exception of *talpa*, already recognised as a different species, it alone agrees with the “subtus atrata” of the description.

### *Cypræa clandestina.*

The addition of a pictorial synonym, “Pet. Gaz. 97, f. 10,” in the revised copy of the ‘Systema,’ corroborates the identification that had been hitherto based upon the description alone. The *Cypræa moniliaris* of Lamareck (Sow. Conch. Ill. Cyp. f. 87) is present in the Linnean cabinet, and alone agrees with the combined pictorial and descriptive definition.

### *Cypræa succincta.*

Linnæus did not himself possess this species, which he described at large in the ‘Museum Ulricæ.’ It has ever proved a source of difficulty to conchological writers, who have suggested various *Cowries* as its representative. Solander fancied it was *C. Humphreysii*; Bruguière opined that it was a young *C. mus*; Mörch the *cinerea* of Gmelin; and I myself had imagined, from the description, that it might perchance have been an almost mature example of *C. pyrum*. Thanks to Mr. Gaskoin, that diligent investigator of the *Cypræadæ*, the mystery has been solved by the examination of the original type still preserved in the Dronningen Museum near Upsala. The figures here engraved (pl. 5, f. 1, 2) are copied by Mr. Gaskoin’s permission from some beautiful paintings of the Royal specimens; and the magnificent suite of examples in the collection of Miss Saul evidences that the Linnean *succincta* is the immature state of *Cypræa onyx*, which species it immediately followed in the tenth edition of the ‘Systema,’ and in the ‘Museum Ulricæ.’

### *Cypræa ziczac.*

In the proposed new edition of his 'Systema,' the illustrious Swede has inserted the following addition to his published description "Supra flavicans, fasciis albis luteo undulatis." The *C. undata* of Lamarck has been confused by some writers with this very different *Cowry*, probably on account of the expression "ovi passerini magnitudine" (rather an uncertain standard, being applied alike to *annulus* and *asellus*), the size of the irreconisable figure in Bonanni, and the markings upon the shells delineated by Seba; the latter, however, are represented as not larger than *ziczac* proper, and, moreover, do not form part of the original synonymy. Whether Linnæus regarded that shell as a variety may be uncertain (both species are preserved in his collection); but the "subtus lutea, punctis fuscis" of the 'Systema,' and the "Noscitur basi lutea punctis nigris minimis" of the 'Museum Ulricæ,' clearly evidence that the *Cowry* (Sow. Conch. Ill. Cyp. f. 133) so named by Lamarck and Reeve was the typical and original *ziczac*. Had Linnæus designed *undata*, he would scarcely have passed over its representation (Arg. pl. 21, N) in a work so habitually, if not invariably, referred to by him as Argenville's 'Conchyliologie.' In his revised copy he has substituted 661 (which exhibits the species) for his former circuitous, though necessary, method of referring to the earlier edition of Lister. The cited figure of Petiver, likewise, has been generally quoted for this shell: it is not, however, a very accurate delineation.

### *Cypræa hirundo.*

As Petiver's figure is by no means a very characteristic one, and the obscure bandlike painting is not indicated among the details of the 'Museum Ulricæ,' the additional synonym of "Mart. Syst. t. 28, f. 282" in the revised 'Systema,' and the fact that the *Cypræa hirundo* of authors (Reeve, Conch. Icon. Cyp. f. 104) is present in the Linnean cabinet, where it solely answers to the definition of the species, are not without value

in confirming the established opinion. The younger Linné has correctly cited "Knorr, Conch. 4, t. 25, f. 4" as illustrative of the shell designed by his father.

### *Cypræa asellus.*

In his revision of the 'Systema,' Linnæus has properly changed the former erroneous reference to Lister (which he had appended likewise and more fittingly to *cribraria*) to "t. 666," and has also quoted figures 280, 281 of Martini's twenty-seventh plate. The synonymy thus amended is correct, and clearly indicates the *Cypræa asellus* of authors (Sow. Conch. Ill. Cyp. f. 93), examples of which are still preserved in the Linnean cabinet, and alone agree with the definition of the species.

### *Cypræa erronea.*

The *Cypræa olivacea* of Lamarck (Sow. Conch. Ill. Cyp. f. 124) is still preserved in the box thus marked in the Linnean cabinet, and delineations of that shell, "Mart. Syst. t. 27, f. 278, 279," are cited by the younger Linné in illustration of the species designed by his father. This confirms the conclusion arrived at by Gray, Deshayes, &c., from a study of the 'Museum Ulricæ.' As a further elucidation of the difference between it and *stolida*, our author has written "quodque lateribus non marginata": the dorsal spot on the variety described by Linnæus seems, indeed, the sole point of resemblance.

### *Cypræa cribraria.*

The *Cypræa cribraria* of authors (Reeve, Conch. Icon. Cyp. f. 81) is preserved in the box thus marked in the Linnean cabinet. In the revised copy of the 'Systema' "t. 695" has been substituted for the former circuitous reference to Lister, "Mart. Syst. t. 31, f. 336" (a not very accurate representation

of *cribraria*, but generally quoted for it) has been added to the synonymy, and "t. 80, f. K" (there is no such figure) has been erased from the reference to Gualtier. Both Regenfuss and Argenville represent the species intended.

### ***Cypræa moneta.***

The well-known *Cypræa moneta* (Reeve, Conch. Icon. Cyp. f. 74) is still preserved in the box thus marked in the Linnean cabinet. In the revised copy of the 'Systema' "sæpe annulo flavo circumdata ut s(equens)" has been appended to the description, "List. con. 709" has been substituted for the former uncertain (since the plates were not always arranged alike in all the copies of Lister) mode of reference to that work, and "Mart. Syst. t. 31, f. 337, 338" has been added to the references. The general accuracy of the synonymy forbade an erroneous identification.

### ***Cypræa annulus.***

The *Cypræa annulus* of authors (Reeve, Conch. Icon. Cyp. f. 71) is preserved in the box thus marked in the Linnean cabinet. Linnæus has added in manuscript a reference to figures 239, 240 of Martini's twenty-fourth plate, and "Knorr 4, t. 9, f. 4" has been appended in the copy that belonged to the younger Linné. The published synonymy is probably correct, though Rondelet's fourth *Cowry* is almost as like *obvelata*.

### ***Cypræa caurica.***

The *Cypræa caurica* of authors (Reeve, Conch. Icon. Cyp. f. 46) is still preserved in the box thus marked in the Linnean cabinet; and Mart. Syst. t. 29, f. 301, 302" has been rightly quoted in the manuscript of the illustrious Swede. The synonym of Gualtier, which indicates a shell whose features do not accord with those assigned to the present species, must

be expunged: it was probably a misprint for A.A. of the same plate, which has been usually cited for *caurica*.

### ***Cypræa erosa.***

From the correctness of the published synonymy this species was identified at an early period. The *Cypræa erosa* of authors (Lister, Hist. Conch. pl. 692) is still preserved in the box thus marked in the Linnean cabinet, and "Mart. Syst. t. 30, f. 320, 321" is rightly quoted in the revised copy of the 'Systema,' where the modern numbering ("692") of Lister's plate has been substituted for the more circuitous style of reference to the earlier edition of his 'Historiæ.'

### ***Cypræa flaveola.***

The older writers were unable to recognise this species, although described at large in the 'Museum Ulricæ.' Chemnitz, Schröter, Gmelin, and Dillwyn, left it in its primitive obscurity; Born's *flaveola* was *pyrum* and Lamarck's the shell termed *spurca* by Linnæus, neither of which *Cowries* possesses the required characteristics. The claims of another species suggested as the Linnean *flaveola* by Gray, and confidently received as such by Deshayes, Sowerby, and Reeve, are decidedly stronger; for its features approach more nearly to the ideal shadowed out from the combined descriptions of the 'Museum' and the 'Systema' than any other *Cypræa* I have met with. I cannot doubt that it was the shell intended in the 'Systema,' for two examples of it (Reeve, Conch. Icon. Cypr. pl. 18, f. 95) are preserved in the Linnean cabinet, and alone of its undetermined contents (our author has declared his possession of it) exhibit the few features required by the description in that work. Moreover, Linnæus, in his revised copy of the 'Systema,' has referred us to plate 96 figure 12 of Petiver's 'Gazophylacium,' which drawing bears much resemblance to his specimens, and though possibly meant for *gangrenosa* (for

which it has been quoted), was the nearest approach to a representation of the species then extant.

The “*noscitur colore supra et subtus flavo*” of the ‘*Museum Ulricæ*’ does not suit the white-based *flaveola* of the four eminent conchologists just mentioned. It is not improbable, then, that the same appellation was bestowed at different periods upon two distinct species: the one (that noticed in the final edition of the ‘*Systema*’) adorned with obsolete and somewhat scattered marginal spots; the other (that described in the ‘*Museum*’ and in the tenth edition of the ‘*Systema*,’ where none are mentioned) entirely destitute of them.

### *Cypræa spurca.*

The *Cypræa flaveola* of Lamarck, now generally recognised as the *spurca* (Reeve, *Conch. Icon.* vol. iii. *Cyp.* f. 68) of Linnæus is present, as declared, in his cabinet, where no other species possesses the required characteristics. Although the description was not very ample, and, moreover, was not illustrated by references to any engraving, the confined locality, by greatly limiting the number of species to be compared with the definition, has served to indicate the object intended by our author.

### *Cypræa stolidæ.*

The *Cypræa stolidæ* of authors (Reeve, *Conch. Icon.* *Cyp.* f. 67) is still preserved in the Linnean cabinet, and alone agrees with the definition of this *Cowry*. The species was pictorially defined in the tenth edition of the ‘*Systema*,’ where its very brief description harmonised with the single reference to Argenville’s figure. In the revised copy, the 19 in the synonym of Petiver has been rightly changed to 18. The typographical errors, which have caused such perplexity to naturalists, resulted, I suspect, from the peculiar handwriting of Linnæus, which is very difficult to decypher. The younger Linné has cited, in further illustration of the species, “*Mart. Syst. t. 29, f. 305,*” and “*Born, Ind. 177.*”

### *Cypræa helvola.*

Notwithstanding the comparatively long account of this *Cowry* in the 'Museum Ulricæ,' the details there mentioned, however adequate until of late years to separate the shell from its then known congeners, can scarcely be regarded as sufficient, from the absence of any pictorial synonym, to indisputably define it, now that the number of known species has been so infinitely increased. The addition, therefore, of the following references, "List. Conch. 691, f. 38—Mart. Conch. i. t. 30, f. 326, 327—Knorr, Conch. 6, t. 14, f. 6, 7," in the copy of the younger Linné, as illustrative of the species designed by his father, is not devoid of importance. Linnæus had proposed to enlarge his brief description in the 'Systema' by the following paragraph: "Subtus lutea, lateribus ferrugineis, dorso albido luteoque maculata." The *Cypræa helvola* of authors (Reeve, Conch. Icon. vol. iii. Cyp. f. 72) is present (as declared) in the Linnean cabinet, and alone of its contents answers to the description.

### *Cypræa ocellata.*

The language of the 'Museum Ulricæ' so clearly points to the *Cowry* accepted universally as the *ocellata* of Linnæus, that no difficulty has been experienced by writers in the identification of the species. That shell (Sowerby, Conch. Ill. Cyp. f. 67) is present in the Linnean collection, and alone agrees with the definition. Petiver's figure is very indifferent; Lister's (the later edition has been here cited) is correct; Bonanni's execrable. In addition to these illustrations "Mart Syst. t. 31, f. 333, 334" has been rightly quoted in the revised copy of the 'Systema.'

### *Cypræa poraria.*

From the particulars specified in the 'Museum Ulricæ' no doubt could be entertained that the richly coloured shell so

fully described in that work was either the *poraria* of modern writers, or one of its very closely allied congeners. The partially marked specimen in the Linnean cabinet (where no allied species is present) evidences that our later conchologists have rightly divined the species intended, since that shell (Reeve, *Conch. Icon. Cypr. f. 99*) alone of the margined *Cowries* contained in the collection corresponds in features with the definition. In the proposed new edition of the 'Systema' "*Subtus violacea*" was designed to have been inserted among the essential characters.

### *Cypræa pediculus.*

In the revised copy of the 'Systema' figures 309 to 311 of Martini's first volume (*Conch. Cab. t. 29*) have been referred to as illustrative, and "List. *Conch.* 706, f. 56" has been substituted for the previous more circuitous method of citing that publication. From the long array of synonyms one is led to expect a conflicting jumble of closely allied, yet essentially distinct, species; the list, however, when purified by a strict adherence to the demands of the descriptive definition, leaves only two *Cowries* to claim the Linnean appellation. These correspond, severally, to the two principal varieties that are indicated in the terminal paragraphs of the description, the *var.* "*Europæa*," destitute of a dorsal groove (in which the unspotted North British form, *var.* "*Anglica*" must be included), and the *var.* "*Indica*" (the Jamaica shell), which is both furnished with a dorsal furrow and dusky spots. Now the shell delineated by Rumphius, whose engraving has been copied by Petiver, and one of the three cited figures in Gualtier (pl. 14, f. P.), display, indeed, a dorsal groove, but are devoid of coloured markings; hence, as these features must be combined together, or the former be wholly absent, it is clear that these references, usually ascribed to *C. oryza* (the latter in shape approaches more nearly to *nivea*, which is present in the Linnean collection), must be removed from the synonymy. The others may be grouped as follows:—



*C. pediculus* of Lamarek (Argenv.—Lister, Conch.—Gualt. 15, P.—Martini, f. 310, 311.)

*C. Europæa* of Montagu (Gualt. 15, R.—Lister, Angl.—Martini, f. 309—Ginanni and Barrelier, probably, but badly done).

Adanson's figure looks so like the latter, that one would naturally refer it there, but it was probably designed for *Napolina*, a very closely allied Senegal shell, which of late has been separated from it.

Both the West Indian (Reeve, Conch. Ic. vol. iii. Cyp. f. 138) and the European (Donov. Brit. Shells, pl. 43) forms are preserved in the Linnean cabinet.

Had not the *C. sulcata* of Dillwyn included several other distinct species (*carnea*, *pulex*, *oryza*) one might have preferred bestowing that appellation upon the former variety, since, assuredly, two most essentially different *Cowries* have been irremediably confused by Linnæus. Since, however, that form ("Indica") takes precedence of the rest in the specification of both varieties and localities, it is perhaps expedient to follow Reeve in ascribing the name *pediculus* to it, rather than fabricate a new appellation for that abundant shell. It must be remembered, however, that the characteristic spots are not particularised in the 'Museum Ulricæ,' where the expression "sæpe," in allusion to the dorsal furrow, and the choice of synonyms (Rump.—Gualt. 14, f. P.—Arg.) insinuate a like confusion of species.

### **Cypræa nucleus.**

The name that follows the reference to Rumphius corrects the misprint of 36, in the twelfth edition, in place of 39, as it previously stood in the earlier edition of the same work, and in the 'Museum Ulricæ.' "Lister, c. 8, t. 2, f. 3," means, as we learn from the substitution of "610, f. 61" in the revised copy, the second page of engravings, in plate 3, of the eighth chapter: the figure referred to, however, is *C. Madagascariensis*, an allied shell which suits not the "subrostrata" of the description: t. 2 would be *annulus*, which exhibits not the slightest specific affinity to this shell. The rest of the synonymy,

though not one of the delineations are perfectly accurate, may stand, except the group marked 22 in Seba, which contains several *Cowries*, yet not one that can be positively pronounced that for which it has been cited. The language of the 'Museum Ulricæ' and the selected synonymy (the three first authors mentioned in that of the 'Systema') distinctly point to the *Cypræa nucleus* of authors, which shell (Reeve, Conch. Icon. iii. Cyp. f. 70) is still preserved in the Linnean cabinet, where, with the exception of *C. cicercula* (and that is otherwise determined) it alone at all approaches the described features of the species. The specimen is still inscribed with the numerals 32, probably a portion of 323, the number of its position in the 'Vermes Testacea' of the tenth edition. "Knorr, 4, t. 17, f. 7" has been cited in the manuscript of the younger Linné.

### *Cypræa staphylea.*

In addition to the published synonym of Argenville (a wretched engraving) the following illustrative references have been inserted by Linnæus in his revised 'Systema:' "List. Conch. 708," "Mart. Sys. t. 29, f. 313, 314," "Pet. Gaz. 97, f. 15." The last of these is very uncharacteristic. The *Cypræa staphylea* of authors (Reeve, Conch. Icon. vol. iii. Cyp. f. 82, b.) is still preserved in the Linnean cabinet, and alone of its contents agrees with both these figures and the description in the 'Systema.' The account of its features in the 'Museum Ulricæ' is so graphic that naturalists could scarcely fail in ascertaining the species.

### *Cypræa cicercula.*

A very desirable addition has been made to the published synonymy, by a reference in the revised copy of the 'Systema,' to "Mart. Syst. t. 24, f. 243, 244," which engraving exhibits a characteristic delineation of the *Cypræa cicercula* of authors (Sow. Conch. Ill. Cyp. f. 84). That shell is still preserved in the Linnean cabinet, and alone of its contents agrees with the de-

scription and the manuscript synonym. As to the cited figures of Gualtier and Rumphius, the former assuredly does not belong to this species, being more like the preceding; the latter reference was probably a misprint for K (9 represents an *Oliva*), which has been usually quoted for *cicerula*. The peculiarity of its features could alone have enabled naturalists to truly divine what *Cowry* was intended by so very brief a description and so very inaccurate a synonymy.

### **Cypræa globulus.**

The description in the 'Museum Ulricæ,' aided by the selected synonymy of that work, clearly indicates the *Cypræa globulus* of authors. This shell (Reeve, Conch. Icon. vol. iii. Cyp. f. 118) is present in the Linnean cabinet, and alone of its contents agrees with the definition. In addition to the cited figures (none of which are very characteristic), Linnæus, in his revised copy, has quoted an indifferent engraving in Martini (pl. 24, f. 242), which has been almost invariably ascribed to this species. The O in the reference to Petiver's Amboyna shells was probably a misprint for 19, which latter is copied from the cited reference to Rumphius. Barrelier's figure is irreconisable.

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### **BULLA.**

#### **Bulla obum.**

The *Ovula oviformis* of authors (Sowerby, Spec. Conch. Ov. f. 2, 3) is marked for this shell in the Linnean cabinet. It was impossible for naturalists to avoid recognising a species so strikingly peculiar in its features, and illustrated by so correct

a synonymy. "Mart. Sys. t. 22, f. 205, 206" has been added, and rightly so, in the manuscript of Linnæus, and "711, f. 65" (the modern numbering) been substituted for the original more circuitous mode of reference to Lister's 'Historiæ.'

### ***Bulla volva.***

The *Ovulum volva* of Sowerby's 'Thesaurus' (vol. ii. pl. 99, f. 6, 7) is present in the Linnean cabinet, and alone agrees with the description and appended synonymy. "Knorr, Conch. 5, t. 1, f. 2, 3; 6, t. 32, f. 1" is added in the copy that belonged to the younger Linné. The locality is erroneous; the shell being a native of China.

### ***Bulla birostris.***

Two long-beaked *Ovulae* were known to Linnæus, one (*volva*) characterised by the striation of its beaks, the other (the shell under consideration) by their smoothness. Now since the extremities in the *Ovula birostris* of authors (Sow. Thes. Conch. pl. 100, t. 66) are plainly striated, and the beaks, moreover, are not, as asserted of the type, as long as the central portion of the shell, "rostra æqualia lævia, fere ventris testæ longitudine," it is manifest that the received identification is erroneous. The required features may be found in the *O. longirostrata* of Sowerby (Thes. Conch. pl. 100, f. 59, 60), which answers perfectly to the rest of the description. Both these shells (the former a white specimen, the latter pink and sadly broken) are placed together in the same box in the Linnean collection, and are the only species in the cabinet whose characters at all agree with those ascribed to *Bulla birostris*. In the revised copy of the 'Systema' there is added "Variat albo, rostris ventre brevioribus," which induces the supposition that the former was held a variety, the latter the typical form. The circumstance that the presence of an obsolete denticle has been recorded in the succeeding species, whilst none has been attributed to the present, corroborates the idea; since precisely the same distinction

exists between *longirostrata* and *birostris*, in the latter only of which is a denticle present. Moreover, as no notice has been taken by Linnæus of the figure (217) of the traditional *birostris* in the first volume of Martini, whose engravings have been elsewhere cited throughout the revised copy, it is probable that the delineation was advisedly rejected.

### ***Bulla spelta.***

This species was far better defined in the tenth than in the twelfth edition of the 'Systema;' for the characters of the succinct diagnosis were not contrary to those of the single illustrative figure (Gualtier, pl. 15, f. 4) referred to, and both, moreover, harmonise with the features of a shell from the authenticated locality. This combination distinctly points out the *Ovulum secale* of Sowerby's 'Species Conchyliorum' as the true representative of the Linnean shell, and that well-known species has been hence termed *O. spelta* in Philippi's 'Enumeratio Molluscorum Siciliæ.' An important change is observable in the twelfth edition: the "utrinque attenuata" has been altered to "utrinque obtusiuscula," and three additional references have been annexed to the synonymy. Of these, Petiver's drawings (not 1, 3, as misprinted, but 2, 3; figure one represents *Bulimus decollatus*, for which it has been quoted by our author) are designed for *O. carneum*, whose rich colouring is opposed to the "alba" of the description; Barrelier's engraving is too wretched even for conjecture; Ginanni's 95, C, bears some slight resemblance to *spelta* proper. The shell intended in the twelfth edition was probably the *O. obtusum* of Sowerby's Monograph; at least, that is the only specimen in the Linnean cabinet which at all agrees with the altered description. The expression "vix birostris, sed magis patula" is not very well suited to it, but is peculiarly applicable to the *spelta* of the Mediterranean. The absence of any denticle upon the upper end of the inner lip in the *Ovulum* selected in the 'Species Conchyliorum,' as the representative of this *Bulla*, is fatal to its claims, since the presence of that characteristic ("denticulo obsoleto ad apicem columellæ"), however

faintly indicated, is expressly enumerated in both editions, among the very few specific features of the definition.

### ***Bulla verrucosa.***

The *Ovula verrucosa* (Sowerby, Gen. Shells, Ov. f. 2) of authors is present in the Linnean cabinet, and alone agrees with the definition of the species. The synonymy is correct, except the misprinted reference to Petiver 99, f. 2 (a botanical specimen); it should have been 97, f. 22. The description in the 'Museum Ulricæ' is characteristic. Linnæus, in his revised copy of the 'Systema,' has substituted "t. 712" for his necessary long reference to the books, sections and chapters in the first edition of Lister, and added, likewise, "Pet. 97, f. 22," "Mart. Syst. 322, t. 23, f. 220, 221."

### ***Bulla gibbosa.***

The well-known *Ovula gibbosa* (Sowerby, Genera Shells, Ov. f. 4) is present in the Linnean cabinet, and alone of its contents agrees with the description of a species which it was impossible for naturalists not to recognise from the account of it in the 'Museum Ulricæ,' and from its fair synonymy. In the revised copy of the 'Systema' "List. 711, f. 64" has been substituted for the former circuitous mode of reference to the 'Historiæ,' and "Mart. Syst. 288, t. 22, f. 200, 201" has been quoted as illustrative.

### ***Bulla naucum.***

In the box marked for this species in the Linnean cabinet is still preserved a specimen of the *Bulla naucum* (Sow. Conch. Man. f. 250) of authors. The reference to Lister "t. 1, f. ult." might mislead us; it was the bottom figure on the second copper-plate of the first page of engravings which was really meant. The synonymy otherwise seems correct; some of the

figures, however (of Seba, for instance), do not exhibit the characteristic spiral striæ. "Mart. t. 22, f. 200, 201" has been added in the revised copy of the 'Systema.' The subcylindric variety mentioned in the 'Museum Ulricæ' was probably the *B. solida* of Bruguière, or some closely allied species.

### ***Bulla aperta.***

Although the description in the 'Systema' is somewhat brief, it is sufficient to mark the modern genus (*Bullæa*) in which the fragile shell should be located: the referred-to figures of Gualtier—one of which has the upper corner of the outer lip rounded, the other has it angulated—point likewise to the same group, being generally recognised for rude representations of the *Bullæa aperta* of our own shores. That species has consequently been almost universally accepted, until of late years, as the representative of the species: the African locality has, however, induced Philippi to consider that some allied but distinct shell was intended: he suggests the one which he has termed *Schröteri*; his drawing of it, however, only differs from the aspect of our adult native specimens in having the elevation of the outer lip rather more angulated than usual, and there is no proof (nor assertion) that the delineated type was extra-European: moreover, Krauss, in his useful work on the South African Mollusca, remarks that the angle in his specimens from the Cape of Good Hope was not so acute as Philippi has represented it. In the recent monograph of the *Bulladæ* by Adams, his *Schröteri* looks exactly like our British examples, and, indeed, is declared to be the *aperta* of Montagu; yet it is said to come from the Philippines. I myself have received from the Cape an example that I cannot distinguish from the more corrugated British ones. Whether such an extensive range is possible may be doubtful; but the transference of the name from the traditional *aperta*, without more cogent reasons for the alteration, seems scarcely advisable. The only specimen in the Linnean collection which at all approaches the description in the 'Systema' looks exactly like Reeve's figure (Conch. Syst. pl. 153, f. 3) of the British *aperta*, and the

following additions in the manuscript of the younger Linné, "Da Costa, Conch. t. 2, f. 3," "In Oceano Anglico," support the received opinion. Strange to relate, neither of the two (supposing them to be distinct) correctly answers to the description; for the 'Systema' declares that the surface is spirally ("transversim") substriated, and the vertex or top ("antice") umbilicated. Now the *B. Sinensis* of Adams possesses the former characteristic, and answers in all other particulars, excepting the umbilication and locality. The combined postulates cannot be found in any known member of the genus, unless possibly in some of the minuter kinds, and nothing is said that could lead one to imagine the species to be a microscopic one. In all probability Spengler (the authority for the locality) furnished the example from which our author drew up his account; one feels disappointed, consequently, in not finding a figure in harmony with the "transversim substriata" in the great publication of his friend and correspondent Chemnitz, whose account of the "*Bulla aperta Linnæi*" (vol. x. p. 119) is not devoid of interest. His delineation (pl. 146, f. 1354, 1355), which exhibits some well-marked longitudinal corrugations, has been constituted a species by Pfeiffer in his 'Register' to the plates of that work.

### ***Bulla hydatis.***

The small Mediterranean variety (Encycl Méth. Vers, pl. 360, f. 1) of the *Bulla hydatis* of authors is still preserved in the Linnean cabinet, and alone of the shells present agrees with the definition of the species. Gualtier's figure approaches to the larger British form, which may possibly prove distinct. The recorded locality limited greatly the number of shells to be compared with the description, and enabled naturalists to identify with readiness this too succinctly defined species.

### ***Bulla ampulla.***

The delineations of several very distinct *Bullæ* are grouped together in the synonymy of this shell; the smaller figures



were probably supposed to be representations of immature examples. By strictly attending to the postulates of the diagnosis, and ejecting, as erroneous, all such figures as do not harmonise with the term "rotundata," we exclude at once the engravings of *B. amygdalus* and other elongated species in Barrelier, Columna, Lister, Bonanni, Adanson, Petiver (t. 50, f. 13), and Gualtier (all except E). The rest of the synonyms decidedly indicate the *Bulla ampulla* of authors (unless, perchance, some few of the great ring of *Bullæ* figured by Seba); so, too, does "Mart. Syst. t. 21, f. 189—191," which reference has been added by Linnæus in his revised copy of the 'Systema.' That shell (Sowerby, Genera Shells, Bulla, f. 4) is present in the Linnean collection, as stated, and alone agrees with the description and the purified references. Grewe's figures are not marked 7, 8, but are the seventh and eighth in position upon the plate.

### ***Bulla lignaria.***

The *Bulla lignaria* of our own coast (Crouch, Introd. Lam. Conch. pl. 14, f. 9) is marked for this species in the Linnean cabinet. The figure of Lister, being in harmony with the description, enabled naturalists to identify this very peculiar-looking shell with great facility. In the copy of the 'Systema' that belonged to Linnæus "Mart. Syst. t. 21, f. 194, 195" has been rightly added; in that which belonged to his son "Knorr, Conch. 6, t. 37, f. 4, 5," "Da Costa, Conc. Ang. t. 1, f. 9," "Pen. Zool. 4, t. 70, f. 83," have been likewise correctly appended.

### ***Bulla physis.***

The *Bulla physis* of authors (Mart. Conch. Cab. vol. i. pl. 21, f. 196, 197) is marked for this species in the Linnean cabinet, and agrees with the description and entire synonymy. The above-mentioned figures of Martini are also cited by Linnæus in his revised copy of the 'Systema.' The 1 before 46, in the reference to Seba, is a typographical redundancy.

## ***Bulla amplustre.***

The erroneous reference, in the tenth edition, to figures in Lister and Gualtier which did not correspond with the ascribed features, was not repeated in the twelfth, where the description is not illustrated by any pictorial synonyms, but refers us for details to the 'Museum Ulricæ.' The language of that work so clearly describes the very peculiar colouring of the *Bulla amplustre* of authors, a specimen (Mawe, Conch. t. 22, f. 5) of which is still preserved in the Linnean cabinet, where it solely agrees with the definition, that few writers have failed to recognise it. The *vexillum* has occasionally been confused with it, but the painting is quite different.

## ***Bulla ficus.***

The synonymy of this *Bulla* comprehends delineations of most of the *Ficulæ* known to the older conchologists. These figures, for the most part, are so ill executed that it requires some boldness to pronounce upon the species intended. *F. ficus* of authors, however (Seba, 68, f. 5), *ficoides* (Bonan. 3, t. 15) and *reticulata* (Gualt. 26, M) are clearly included: the two former only are present in the Linnean collection. The "reticulato-striata spira oblitterata" suits *ficoides* better; "obovato-clavata" is more applicable to the shape of *ficus*. The details of the 'Museum Ulricæ' are equally contradictory, if taken in their strictest sense "pallide flavescens, maculis fuscis" and "spira obtusa, vix eminens supra testam" are characteristic rather of *ficoides* than *ficus*; "obovata, rotundata, lævis," the last expression explained, or modified by, "striis elevatis decussatis obsoletis" are the reverse. The adoption of the genus *Ficula*, and the application of the specific epithet *lævis* applied by Reeve to the traditional *ficus* (Kiener, Coq. Viv. Pyrula, pl. 13, f. 1), to avoid tautology, obviate the difficulty: otherwise, it would be desirable, in a case of doubt, to follow in the wake of our predecessors in science.

The reference to plate 38 of Seba was an error; nine out of the twelve cited figures were again quoted, and more properly so, for the succeeding species, of which the remaining three are likewise representations.

### **Bulla rapa.**

In the reference to Seba, "38, f. 7, 8" was a misprint for for "68, f. 7, 8"; the entire synonymy is otherwise correct. The *Pyrula papyracea* of authors (Kiener, *Pyrula*, pl. 14, f. 2) is present (as stated) in the Linnean cabinet, and alone agrees with the combined pictorial and descriptive definition.

### **Bulla canaliculata.**

Our author described this shell from an example in the 'Museum Ulricæ'; he did not himself possess it. The account of it is so thoroughly insufficient, that even its modern genus has not been ascertained, so that an examination of the type, though it might serve to inform us what was really designed by Linnæus, should not disturb any appellation that may have been subsequently bestowed (with an adequate and lucid definition) upon the species. Even the younger Linné did not recognise it, but has written in his copy "*Voluta ex auritis vult Solander*." The *Akera Ceylanica* does not so ill accord with the following brief description, transcribed from the 'Museum Ulricæ':—

"Oblonga, cylindrica, laxa, testacea, pallido-nebulata. *Spira brevis*, anfractibus excavato-canaliculatis. *Columella parum torta*."

### **Bulla conoidea.**

Had our author possessed this shell, which although described at some length has baffled the attempts of naturalists to determine it, we might have hoped to have identified it, by

an analysis of the contents of his cabinet. Unfortunately such was not the case, and since no record is preserved of from whence the description was derived, it is better to wholly erase the name from our catalogues.

Linnæus has violated his own arrangement by introducing into a genus characterised as being perfectly entire at the base ("basi integerrima"), and devoid of columellar plaits ("columella lævis"), a species declared to have five or six folds upon the pillar, and to be notched at the base of the aperture. The value of an illustrative reference is here exemplified by its absence; for want of one we cannot even determine in what modern genus the *considea* should be located. Had it been inserted originally in *Voluta*, one would have conjectured it had been a *Mitra* of the *Conohelix* section: it first appeared, however, in the final edition.

### ***Bulla fontinalis.***

From the brief characters in the 'Systema' we only know this shell to be a *Physa*; it is from the details in the 'Fauna Suecica,' and, above all, the locality there specified, which contracts so vastly (thanks to the paucity of the indigenous *Physæ* of the North of Europe) the number of objects to be compared with the definition, that we are enabled to positively recognise the species designed by Linnæus. It is the *Physa fontinalis* of authors of which an example (Sowerby, Genera Shells, Lymn. f. 8) is still preserved in the Linnean cabinet. No references to any illustrative figures were published by Linnæus; he had remedied this defect, however, in his proposed new edition, by citing "List. Conch. t. 134, f. 34" and "Gualt. Test. t. 5, f. C. C."; the latter, though generally quoted for *fontinalis*, is not very characteristic.

### ***Bulla hypnorum.***

Nothing in the Linnean cabinet answers to the definition of this fluviatile shell. The description in the 'Fauna Suecica,'

however, being sufficiently ample to distinguish the species from any of the *Testacea* of Northern Europe, has enabled naturalists to universally recognise the object intended in the *Physa hypnorum* of modern conchology (Sowerby, Genera Shells, Lymn. f. 10).

### **Bulla terebellum.**

This aberrant species was pictorially defined in the tenth edition of the 'Systema,' and was then located in the genus *Conus*. All the cited figures represent the *Terebellum subulatum* of Lamarck's 'Animaux,' and that shell (Crouch, Introd. Lam. Conch. pl. 20, f. 1) is still present, as declared, in the collection of our author, and alone agrees with both description and synonymy. Linnæus, in his revised copy, has substituted 736 for the longer mode of reference to the earlier edition of Lister: both the lineated and spotted forms of *subulatum* are delineated in that engraving. The *Conus terebellum* of the 'Museum Ulricæ' appears from its description to be perfectly distinct. The expressions "Striæ 44, acutiusculæ, elevatæ, inæquales," and "Spira conica, testæ  $\frac{1}{4}$  longitudine, sine tuberculis majoribus" (which implies that it has small ones), do not at all harmonise with the well-known features of this smooth-surfaced species.

### **Bulla Cypræa.**

I cannot agree with Deshayes in identifying this shell with *Ancillaria cinnamonea*; for even had our author manifestly described a member of that genus, there is nothing in his very brief account that is indicative of that species in particular.

An examination of the tenth edition of the 'Systema' shows us that Linnæus did not intend to constitute a species thus named, but merely inserted a description of it in *Bulla*, as a precautionary measure, because the less experienced naturalists would naturally search for the names of the young *Cowries* in that genus. It was not there reckoned among the species,

and numbered as such, as by his subsequent carelessness it eventually appeared, but was distinguished from the rest by a cypher, and located between 341 and 342, with the remark, that it was introduced lest the shell, which finally assumes the features of a *Cowry*, should puzzle us.

On examination of No. 359 in the twelfth edition (*Cyp. spurca*), we shall find that the *Bulla Cypræa* is there claimed as a stage of that Mediterranean shell: and, in his revised copy, Linnæus has written "eadem" at the conclusion of his description.

### ***Bulla virginea.***

The *Achatina virginea* (Mawe, Conch. t. 22, f. 6) of authors is marked for this species in the Linnean cabinet. In his revised copy, Linnæus has corrected the synonymy by substituting 11 for 7, and 15 for 12, in the respective references to the works of Petiver and Lister.

The variety B must be excluded; it is the *Achatina vexillum* of authors.

### ***Bulla achatina.***

As the majority of the synonyms belong to *Achatina perdix*, and the fuller description in the 'Museum Ulricæ,' where Gualtier and Argenville alone are quoted, correctly answers to the characteristics of that shell (Seba, iii. pl. 71, f. 1), it has been generally accepted as the typical *Bulla achatina* of Linnæus. Like most very large shells for which there was no room in his cabinet, no specimen is preserved in his collection. The erroneous reference to Petiver has been properly erased in the revised copy of the 'Systema;' that to Adanson must likewise be expelled, for the shell delineated by him suits not the described features. Seba, plate 71, figures 4, 5, usually quoted for *A. zebra*, in all probability represented the supposed lineated variety particularised by our author.

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## VOLUTA.

*Voluta auris-Midæ.*

“Biplicata” replaces “bidentata” in the proposed new edition of the ‘Systema,’ and “1058, f. 6” the previously inaccurate reference to Lister’s ‘Historiæ.’ In the copy that belonged to the younger Linné the reference to Bonanni, whose engraving has been usually ascribed to the next species, has been duly erased. The synonymy thus amended clearly points out the *Auricula auris-Midæ* of authors, which shell (Reeve, Conch. Syst. pl. 187, f. 10) is still preserved in the Linnean cabinet, and alone of its contents answers to the definition of the species. The colouring mentioned in the ‘Museum Ulricæ,’ “Color opalinus, incarnato albove niger,” is not applicable to the shell in its natural condition.

Figure 6 of Seba’s cited engravings does not even belong to the genus *Auricula*, and must be ejected from the synonymy.

*Voluta auris-Judæ.*

The preceding species having been rightly determined, the recognition of this closely-allied congener followed, as a matter of course, from the specification in the ‘Museum Ulricæ’ of the differences that exist between them. There is a specimen of the *Auricula auris-Judæ* (Reeve, Conch. Syst. pl. 187, f. 4) in the Linnean cabinet, but it cannot be regarded as of any authority, since Linnæus has not signified his possession of one. The revised copy of the ‘Systema’ corroborates the received opinion, by a reference to “List. 32,” the change of “tridentata” to “triplicata,” and the addition of “sed hæc subtilissime striata, illa vero glaberrima” after the word “præcedenti.” The *V. auris-Judæ* of Karsten is a very different shell.

## *Voluta tornatilis.*

How so briefly described and unillustrated a species could have been recognised by naturalists is passing strange. The accuracy of the traditional identification is supported, however, by an analytical examination of the contents of the Linnean cabinet, where the *Tornatella fasciata* (Crouch, Introd. Lam. Conch. pl. 16, f. 8) alone corresponds precisely to the published description of it; and since our author has declared his possession of the species, no reasonable doubt can be entertained of the authority of the specimens. Moreover, the younger Linné has corroborated the evidence, by the citation of "Da Cost. Conch. t. 8, f. 2.—Mart. Syst. t. 26, f. 442, 443.—Pen. Zool. iv. t. 71, f. 86."

## *Voluta solidula.*

Since the cited figure does not exhibit a shell with a plicated pillar, it is evident that it was erroneously referred to, and, probably, because the markings there displayed corresponded to, the painting of the object it was intended to illustrate. The language of the 'Museum Ulricæ' indicates that the shell belonged to the modern genus *Tornatella*, and it has pleased naturalists to select, as its representative, the species designated in consequence *T. solidula* (Reeve, Conch. Syst. pl. 206, f. 7), which, indeed, corresponds fairly enough with the few specific characters that are mentioned in the 'Systema.' The statement, however, in the 'Museum Ulricæ,' that the inner lip is yellow, and the lineated bands are red, is somewhat opposed to the ordinary colouring, and to the words of the 'Systema.' Were it not for the "biplicata" one might have fancied that *T. fluminea* was there intended, and that shell appears at one time to have been confused with it by Linnæus, as the reference to "List. Conch. 814, f. 24," in one of his many copies, evinces.

The younger Linné has erased the faulty reference to



Bonanni, and cited, instead, a drawing of *Tornatella punctata* (Martini, Conch. vol. ii. pl. 43, f. 440, 441), which can only be regarded as an approximate likeness, since it is destitute of the longitudinal markings. No shell in the Linnean cabinet agrees with the definition.

### *Voluta libida.*

No shell in the Linnean cabinet will agree with the characteristics assigned to this doubtful species, which appears to have baffled the acumen of most conchological writers. Schröter, who doubts the correctness of the only synonym published by our author, apparently did not recognise this *Voluta*; at least, he adds little, if anything, to the original particulars, though he surmises its affinity to the *Marginella persicula*. Gmelin and Dillwyn merely copy the words of the 'Systema'; the former, however, follows Schröter in querying the synonymy, and Gronovius in referring "Gualt. pl. 25, C." to it as a variety. The single engraving quoted as illustrative by our author can only be regarded as bearing some resemblance to the object intended; for the species there delineated, so far from possessing the peculiar livid tint, from which the specific appellation originated, is expressly declared to be "candida." There can be no doubt, from the figure and description combined, that this puzzling species must be located either in the genus *Marginella* or in *Conovulus*. The alleged number of folds, as well as the synonym, for Gualtier's figure is that of a decided *Marginella*, favour the claims of the former, yet its position in the 'Systema,' apart from the other members of that genus and next to a *Conovulus*, argues against them. It was possibly the *M. prunum*, which is present in the collection, for the anterior fold in that shell is not always very decided, and our author has substituted "quadruplicata" for "quinqueplicata" in his own copy of the 'Systema.'

It is not improbable, for too often this proves to be the case, that the shell which bears the same name in the 'Museum Ulricæ' may have been, even generically, distinct from that intended in the final edition of the 'Systema'; the columella

is there spoken of as “*parum torta*” instead of “*plicata*,” and the fact of the shell having originally been placed with the *Bulle* manifests that the folds of the pristine *livida* were by no means conspicuous.

### *Voluta coffea.*

It has generally been believed that this species belonged to *Auricula*, and to the section *Conovulus*; the exact species, however, was a matter of doubt, the data not being adequate for its determination. Bruguière considered it to be his *Coniformis*; Chemnitz delineated the *A. felis* for it. An analytical examination of the contents of the Linnean cabinet (where *felis* is not present) enables us to assert its identity with the *A. Coniformis* of authors (Reeve, *Conch. Syst.* t. 187, f. 7, exactly), since that shell alone of those present—and Linnæus has asserted his possession of it—answers to the description in the ‘Systema.’ In the revised copy a reference is made to Lister’s ‘*Historiæ*,’ plate 834, f. 59, which, not being represented as toothed upon both lips, cannot have been designed for *Coniformis*, although it exhibits sufficient likeness to that species to have been quoted for it by both Lamarck and Bruguière, and was doubtlessly cited as the most illustrative drawing then extant. This manuscript reference favours the idea of Chemnitz, since the rude figure of Lister is either meant for *felis* or some closely allied congener: had it been published it would perchance have been necessary to have regarded the species as pictorially defined. The younger Linné was apparently not satisfied with the illustration, for in his own manuscript he has quoted figures 60, 61 of the same plate, which are somewhat doubtful delineations, but have been referred by some to *A. monile*. He has correctly recorded Barbadoes as the habitat of the species.

### *Voluta porphyria.*

The *Oliva porphyria* and *erythrostroma* of Lamarck’s ‘*Animaux sans Vertèbres*,’ together with an uncertain species of

the same genus rudely figured by Bonanni, are confused in the synonymy, and the two former lie loose and uninscribed in the Linnean collection. Both of them, indeed, might equally pass for the *Voluta porphyria* of the diagnosis; yet, since the specific epithet must be assigned to one alone, authors have acted wisely in bestowing it exclusively upon the former, which both answers more precisely to the specified characters and locality, and had been termed "*Porphyria*" before the days of Linnæus. Of the published references those of Argenville, and Gualtier, f. P, can alone be retained; the other drawings were, in all probability, only cited from the general resemblance they present (not being coloured) to the more typical forms: the painting of Regenfuss might be considered exceptional; it has, however, been erased, with the remark "ad sequent." in the revised copy of the tenth edition of the 'Systema.' In the details of the 'Museum Ulricæ' the assertion, "Labium interius—in medio scabrum striis transversis ferrugineis. Faux sæpius virescens" (a misprint? for violascens), may not be peculiarly applicable to *O. porphyria* (Sowerby, Genera Shells, Oliva), but is assuredly opposed to the features of *O. erythrostoma*.

### *Voluta olivæ*

Almost all the *Olivæ* known to the ancients are mingled together in the Linnean cabinet, as promiscuously as their figures are grouped together in the twelfth edition of the 'Systema' and in the 'Museum Ulricæ,' where any *Olive* with the meagre qualifications of a short spire and prominent callosity was entitled to the appellation of *Voluta Oliva*.

It is not of momentous importance, to ascertain what member of the genus should be regarded as pre-eminently entitled to the name, since the specific epithet must necessarily be changed, through the elevation of "*Oliva*" to the rank of a generic appellation; still it is not unworthy of remark that the *Oliva nigrita* of Karsten (*O. Maura* of Sowerby, Genera Shells) has been indicated as the principal variety or form in the 'Museum Ulricæ,' and that all the cited engravings (Argenville

alone excepted) of the tenth edition of the 'Systema,' wherein the species originally appeared, pertain to that shell.

### *Voluta ispidula.*

It is manifest from the diagnosis of this and the preceding species, that Linnæus in the 'Systema' mentally only divided the *Olives* into such as had a pad-like projection at the base of the short spire, and such as had a produced spire which was devoid of that callus, from the former of which groups he doubtfully separated *porphyria*, because of the retusion of its outer lip and the partial obliteration of the posterior pad. It was to be expected, then, that his synonymy would exhibit a diversity of species, and, in fact, with the exception of Petiver's engraving, which was copied from Bonanni, every figure represents a different shell, all of which, except Barrelier's, would agree with the too comprehensive description. Rumphius has delineated the *Oliva ispidula* of modern writers at figure 7, and *O. cruenta* at figure 6; Bonanni and Petiver a Brazilian shell with somewhat the aspect of the former; Adanson the *O. hiatula* (as in Reeve). The description in the 'Museum Ulricæ' (where Rumphius alone is cited) harmonises with none of these. The characters, indeed, are somewhat remarkable, "Spira conica, longitudine ipsius testæ. Anfractibus sursum tantum margine acutis et longe ascendentibus," and suit rather such aberrant *Olives* as *O. jaspidea* than the larger and typical ones; they are not such, however, as to ensure identification.

The Linnean cabinet does not assist us; for a fossil, which has much the general aspect of *O. hiatula* (which species has the most prominent spire of those referred to), but which the late Mr. G. B. Sowerby informed me was the *O. plicaria* of Lamarek, is marked for the species in the collection. It is desirable, then, if we should retain the name for *Oliva ispidula*, to abstain from quoting the 'Museum Ulricæ,' and to at least limit the reference to the 'Systema' by the word "partly."

### ***Voluta dactylus.***

Of the *Volutes* in the Linnean cabinet the *Mitra dactylus* (Chemn. Conch. Cab. vol. x. f. 1411, 1412) of the 'Animaux sans Vertèbres' alone answers to the brief description of this species, whose presence in this collection has been recorded by our author. The cited figure of Gualtier is so bad, if intended for this species, and it suits no other six-plaited *Mitra* known to us, that the additional synonym of "List. 813, f. 23," an undoubted representation of *M. dactylus* (added by Linnæus in one of his own copies of the 'Systema,' the one with his coat of arms painted in it) proves of much importance in sanctioning the established identification.

### ***Voluta miliaria.***

Although Barrelier's figure, which was not referred to until the twelfth edition, does not exactly suit the declared features of this species, and, indeed, so much resembles the next, that I suspect the synonym was misplaced by the printer, it has proved serviceable, by suggesting the modern genus in which we might discover a shell whose specific characters would more precisely harmonise with the terms of the description. As that common Mediterranean *Marginella*, the *M. miliacea* of authors, corresponded satisfactorily with both the verbal definition and the limiting locality, it has been generally accepted as the representative of the Linnean *Volute*. This identification is confirmed by an examination of the typical collection, where that species (Payr. Moll. Corse, pl. 8, f. 28, 29) exclusively answers to the recorded features and locality.

### ***Voluta monilis.***

The received opinion of the identity of this species with the *Volvaria* (or rather *Marginella*) *monilis* of modern writers is

corroborated by the presence in the Linnean cabinet of certain perforated individuals of that kind (Kiener, Coq. Viv. Margin. pl. 6, f. 23), which had formed part of a necklace, bracelet, or some other female ornament composed of strung shells. As these examples alone of the entire collection adequately agree with the description, and the presence of the species in his collection has been recorded by Linnæus, no doubt can be reasonably entertained of the typical authority of the specimens.

### *Voluta Persicula.*

Both the *Marginella Persicula* and *lineata* of authors (Encyc. Méth. Vers, pl. 377, f. 3, and var. f. 4) are still preserved in the Linnean cabinet, and of the shells there present alone agree with the definition; they represent severally the varieties *a* and *b* of the 'Systema.' The published synonymy is correct, provided we include, as suggested by Sowerby, the *M. avellana* of Lamarck (Gualt. pl. 28, f. E) in *Persicula* proper.

### *Voluta pallida.*

Both in the twelfth edition of the 'Systema' and in the 'Museum Ulricæ' the characters of this shell experience a remarkable change. When it originally appeared (as a *Bulla*) its shape was termed cylindrical, afterwards in the 'Museum' ovate-cylindric, finally (as a *Volute*) ovate-oblong. The *Bulla* was at first described, moreover, as "livida, longitudinaliter griseo undulata," and no mention was made of columellar folds: in the 'Museum Ulricæ' the colouring was declared to be "incarnata—pallida, sæpe variegata," and the pillar to be "quadriplicata." In sooth, almost the only characteristic common to the species of the tenth and twelfth editions of the 'Systema' is the "spira elevata." I suspect, then, that our author erroneously considered the *Bulla pallida* to be an immature specimen or varietal dwarf form of his after-established *Voluta pallida*. It is not even improbable that the ovate-oblong shell of the twelfth edition, where the synonymy first appeared,

was different from both. Neither of the engravings referred to coincides with the shape mentioned in the description they are intended to illustrate: they are cylindrical, and consequently more suitable for *Bulla* than *Voluta pallida*; yet the indicated colouring of the former is very unlike that exhibited by either of the shells represented, for Adanson's drawing seems the *Martinella triticea* of Sowerby's Monograph, Lister's is decidedly the *Bulla* (*Cylichna*) *cylindrica*. The published locality was taken from Adanson.

To sum up, then: the original *Bulla pallida* is far too briefly defined for positive identification, and may be considered as expunged by our author himself: from the peculiarities of colouring it might have possibly been a young *Cowry*, at least I find nothing in the collection, nor do I know aught elsewhere, that agrees better. The species of the 'Museum Ulricæ' was a *Marginella* (somewhat perchance resembling *rosea* or *carnea*, but the actual species must be conjectural). The *Voluta pallida* (ed. 12) was assuredly a *Marginella*, likewise, and possibly *cærulescens* (specimens of which are present in the Linnean cabinet), yet, as certainty cannot be obtained, it is better to erase the species altogether from our catalogues.

The *Marginella pallida* of Kiener and Sowerby, although by no means an ovate-oblong shell, has frequently been supposed identical with the Linnean *Volute*. This idea has arisen, probably, from the circumstance that it was likewise figured by Lister in the referred-to plate (714), but without the *a*. Schröter's ideal of the *V. pallida* (though too often cited for the same) is perfectly different; it is a magnified drawing of a minute shell, and looks more like the *Marg. lactea* of Kiener. Neither of these species are to be found in the Linnean collection.

Mörch conceives that the *Marginella varia* of Sowerby's 'Thesaurus' (vol. i. pl. 86, f. 137), of which an example is present in the collection, is the true representative of *Voluta pallida*: its narrow cylindrical shape, however, would only suit the *Bulla* of the tenth edition. The conjecture is plausible enough, for that abundant little species would have tolerably suited the ideal formed by the union of Adanson's figure, had it been attached to the diagnosis in the tenth edition, and the very meagre details of the following description: "T. cylindrica (the degree of narrowness is not specified, (spira elevata acuta

(the elevation of the spire is merely in comparison with that of *B. physis* and the adjacent species). *Livida*, longitudinaliter griseo undulata," all which, unfortunately, might quite as well apply to half a score at least of other shells, since even the modern genus is left undefined by the presence of the additional synonym of Lister. The colouring, moreover, if interpreted strictly, would be peculiarly unsatisfactory. The *V. pallida* of Karsten ("lineis flavescentibus longitudinaliter lineata") was assuredly not the Linnean species, but, if a *Marginella*, was probably *limbata*.

### *Voluta faba.*

The figure of Gualtier represents the *Marginella faba* of modern writers, and, being in accordance with the brief description, pictorially defines the species. That shell (Swains. Zool. Illus. ser. 1, pl. 97) is still preserved in the Linnean cabinet, and alone of its contents agrees with the definition.

### *Voluta glabella.*

This species, also, was pictorially defined in the tenth edition of the 'Systema,' by the agreement of the diagnosis with the only figure there cited as illustrative. That engraving (Gualtier, pl. 28, f. L), though somewhat rude, was clearly intended, as we learn from the accompanying description, for the *Marginella glabella* of authors (Sowerby, Thesaur. Conch. vol. i. pl. 72, f. 52, 53), which shell was likewise represented, and characteristically too, in the quoted drawing of Adanson. The details of the 'Museum Ulricæ' accord, likewise, with the features of that shell; yet from their paucity might suit more than one species. The two other plates referred to (only appended in the twelfth edition) are wrongly indicated, though Klein's wretched copy from Lister, plate 818, f. 32, has been also quoted by Lamarck for the *Marg. glabella*. In the revised copy of the 'Systema' "List. t. 818, f. 31" has been added: now the figure in plate 818, with the numerals 31 below it, was probably meant



for *glabella*; it is not, however, 31 of the writing that accompanies it. Our author, in his final list, has not enumerated the species among the *Volutes* that were in his own possession. The stated locality is correct.

### ***Voluta reticulata.***

No difficulty has been experienced by naturalists in recognising this species (whose presence in his collection has been recorded by Linnæus), since the single engraving referred to, as illustrative, is an acknowledged representation of the well-known *Cancellaria reticulata*, a shell which possesses the features required by the description. That species (Kiener, Coq. Viv. Canc. pl. 2, f. 1) is still preserved in the Linnean cabinet, and alone of its contents answers to the definition. Our author having observed how remote was its affinity to the preceding and succeeding species, has written in his revised copy "locanda post 431," that is to say, after the *Turbinellæ*.

### ***Voluta mercatoria.***

The cited figures of Petiver and Gualtier represent the *Columbella mercatoria* of authors, which answers satisfactorily enough to the detailed characteristics of the species. That shell (Sowerby, Thes. Conch. vol. i. pl. 36, f. 30, 31) is still preserved in the Linnean cabinet, and alone of its contents corresponds with the definition.

### ***Voluta rustica.***

The three cited figures all represent *Columbellæ*. The one delineated by Adanson, being described by him as sulcated, cannot be regarded as more than an approximation to a species expressly stated to be "*læviuscula*," and must consequently, as well as the African locality, attached to the species from its supposed identity with that Senegal shell, be dismissed from our

consideration. Gualtier's figure H represents the *Columbella rustica* of authors, which perfectly answers to the description and Mediterranean habitat: his figure G, if not a variety, I cannot recognise (*C. festiva*??); assuredly nothing can be found in the Linnean cabinet, which contains numerous individuals of *C. rustica* (Sow. Thes. Conch. vol. i. pl. 36, f. 19, 22), that bears more resemblance to it. Since, then, the presence of this species in the collection is asserted in the lists, there can be no reasonable doubt of the correctness of the traditional identification. In the revised copy of the 'Systema' a reference has been added to "List. 824, f. 44," where a *Columbella* from the Mediterranean, having much the aspect of this species, is delineated.

### *Voluta paupercula.*

In the tenth edition of the 'Systema' this well-known species was pictorially defined by the solely-cited figure of Gualtier, which represents the *Mitra paupercula* of authors (Knorr, Dél. Yeux, pt. 4, pl. 26, f. 5), and by a description which was not discordant with that delineation. The reference to Bonanni in the twelfth edition was an error (probably a misprint); his engraving does not exhibit the required painting, "lineis albis longitudinalibus," and was again quoted for the next species.

### *Voluta mendicaria.*

Born has recognised the Linnean species in the shell (Kiener, Coq. Viv. Col. pl. 6, f. 1) subsequently termed *Columbella mendicaria* by Lamarck. This identification has become traditional, and is by no means unreasonable, although not one of the cited engravings can be pronounced an indisputable likeness of it. All three represent a small dark and white-banded shell, that consequently exhibits the general aspect of *Columbella mendicaria*: all three, however, appear to differ. Petiver's figure, though rude, is very like it; Gualtier's seems meant for a very closely allied species (*zonalis*?), yet, corrected by "ovata," would

be a fitting representation; Bonanni's, which was quoted only in the twelfth edition of the 'Systema,' and like most of the additional references to works already consulted, not over wisely, is scarcely recognisable, and bears about an equal likeness to the *Tornatella tornatilis*!

### *Voluta cancellata.*

An assortment of synonyms more heterogeneous than the one which accompanies the present species has rarely embarrassed a student. Gualtier alone exhibits four distinct shells of three different genera! none of which can be positively pronounced identical with the three figures of Seba, nor look like Adanson's engraving either. Were the drawings more accurate one might arrive at a sound conclusion, but for the most part they are very rude and unsatisfactory. Naturalists probably worked out the species somewhat after this manner. The D and E of Gualtier must be excluded, because they do not display folds on the columella; Seba 45, 46 are also quoted for *Murex senticosus*, and look more like it; Seba 48 is too elongated for "ovata;" Gualtier B, C are *Cancellariæ*, but of what species cannot be well determined (B is irrecongnisable, C reminds one of *crenifera*), yet they both, as well as all Seba's figures, display the latticed sculpture of *C. cancellata*, which shell Adanson most decidedly intended his drawing to represent, as his description clearly manifests. Now the last-named *Cancellaria* possesses all the required features, and may consequently be regarded as the species designed; the locality, moreover, is correct. By some such train of reasoning, if it deserve the name, has the generally accepted recognition been arrived at: and the correctness of the deduction is demonstrated by the presence of that shell (Sow. Thes. Conch. vol. ii. pl. 94, f. 51) in the Linnean cabinet (as declared in the list), where, of the objects therein contained, it alone answers to the description. Linnæus had intended to remove it, along with *reticulata*, to the vicinity of *V. capitellum*, having written "post 431 locanda" in his revised copy of the 'Systema.'

## *Voluta tringa.*

The manuscript of Linnæus conveys no additional information respecting this doubtful species, on which the contents of his cabinet throw little, if any, light. The description in Gmelin's edition of the 'Systema' seems mainly derived from that published by our author; the "triplicata," however, has been somewhat modified. Lamarck, Deshayes, Philippi, and, indeed, almost all conchological writers, acknowledge it to be a *Columbella*; the two former recognised it in the shell termed *C. tringa* in the 'Animaux sans Vertèbres;' the last-named naturalist believed he had detected it in an elongated variety of the *C. rustica*, which is apparently the shell figured by Gualtier; the "labium exterius minime marginatum" and the "spira prominente detrita" scarcely harmonise, however, with this hypothesis. That shell is present in the collection, where, with the exception of the *Columbella cornicula*, which, although it reminds one of the "spira prominente detrita," is utterly dissimilar to the illustrative references, it alone corresponds with the described features. The cited figure of Adanson (*Col. concinna?* of Sowerby), a short-spined plaitless shell, hence decidedly not a correct representation of the species under consideration, was not quoted in the earlier edition, and consequently possesses but little authority, since it clearly does not represent the same object which was delineated by Gualtier.

The representation in the 'Einleitung' (Schröter's ideal of the Linnean species), though generally referred to *Columbella tringa*, seems designed for *C. nitidula*, a shell present in the Linnean collection, which reminds one, in most respects, of both figures and description. The stated locality does not, indeed, suit it, yet, throughout the 'Vermes Testacea,' the West Indian species are ascribed to the Mediterranean. Perhaps, however, upon the whole, Philippi's opinion is best borne out by any arguments to be derived from the 'Systema,' and even in some degree is favoured by the collection. Yet to positively pronounce upon the identity of *tringa* with *rustica* would savour somewhat of presumption.

### *Voluta cornicula.*

The cited engraving of Gualtier represents a small brown *Nassa* (*Buccinum corniculum* of Olivi), which, being destitute of columellar plaits, suits not the diagnosis of the present species, to which it can only be regarded as an approximation. It is clear from the indicated features that the shell should be placed in the genus *Mitra*; and Philippi has suggested, from confidence in the assigned locality (a limiting character when not opposed to the description or synonymy), that it must have been either *lutescens* or *ebenus*. His supposition is confirmed by the Linnean collection, where the former (Payraud. Moll. Corse, pl. 8, f. 19) alone of the specimens there present—and our author has recorded his possession of an example—satisfactorily answers to the definition. The supposed black variety was probably *ebenus*.

### *Voluta virgo.*

Although the details are tolerably full, and the recorded characters rather singular, I can find neither an addition to the original description nor a suggestive synonym in any writer I have consulted. This apparent inability to determine the Linnean species is the more curious as the typical example was received through that admirable conchologist Spengler (invariably misspelt Sprengler in the 'Systema'), whose liberal impartment of both specimens and information to his contemporaries should have thrown light upon what our author designed by his definition. It is not impossible, then, that some account of it may yet exist in one of the innumerable isolated papers scattered through the German periodicals, or possibly Linnæus never returned the shell he had either borrowed or been presented with. He has, at all events, indicated it as possessed by himself, yet, after long and frequent search, I can find nothing in his collection that satisfactorily answers to the description; nothing, indeed, that even approaches it.

Judging from the produced tail and elongated spire one might have expected to have found it in a *Turbinella* of the *infundibulum* section, but none such are to be described in the cabinet. In the revised copy "elongata" has been added to the diagnosis after "perforata," and "Faux striata" is written at the conclusion of the details. Would it not be desirable that the name of this irreconisable shell should fade from our memories?

### *Voluta scabricula.*

I know not on what grounds Lamarek has identified this shell with the *Mitra sphaerulata* of Martyn, since neither Schröter, whose synonymy is copied by Gmelin, nor Born, who, although not quite so comprehensive in his references, has cited representations of no less than three different species, the last of which (Martini, Conch. Cab. vol. iv. f. 1389) alone suits his "striis elevatis luteis," have suggested such an hypothesis. Had our author intended that dark-spotted *Mitre*, he would probably have indicated Seba, plate 50, f. 47, and most assuredly L not D of the cited engraving of Gualtier: the former being apparently designed for *sphaerulata*, the latter irreconisable (at least by myself), yet the nearest approach to the Linnean type of any delineated in that publication.

In the list of shells possessed by Linnæus the presence of *V. scabricula* in his collection has been recorded. There is no question of its being a *Mitra*; the difficulty experienced has been to ascertain the species. His cabinet contains about a dozen members of that genus, of which one alone presents the slightest appearance of a perforation; it exactly answers also to the rest of the description, and exhibits likewise very strikingly the feature insisted upon in the tenth edition "fissura baseos elevata." Since the same exact correspondence can be asserted of no other shell in the collection, and as a representation of it in Lister's 'Historiæ,' "t. 819, f. 36" is referred to in the revised copy of the 'Systema,' I can entertain no doubt, especially as the contrasted features of this and the succeeding shell are conspicuously manifest in the examples, of its typical authority. It is the *Mitra texturata* of Lamarek (Kiener, Coq.

Viv. Mitra, pl. 2, f. 4). There is no 48, O, in Gualtier: the reference to it is expunged in our author's own copy of his 'Systema.'

### *Voluta ruffina.*

The earlier writers have not succeeded in identifying this species. Schröter and Gmelin have copied the Linnean description, but appended a note of interrogation to the reference to Gualtier, whose uncertain figure somewhat reminds one of *Mitra aurantia*, yet cannot be pronounced to be it: Dillwyn, deferring to the authority of Solander, considered it to be identical with the *Mitra adusta* of Lamarck; Deshayes has hinted that either *M. crenifera* or *versicolor* would prove a better substitution. Linnæus having declared his possession of an example, and an analysis of his collection (where none of the previously mentioned *Mitres* are to be found) having demonstrated that one species alone (*texturata* might perhaps be excepted, but that is already appropriated) of its entire contents will answer to the description, no reasonable doubt of the typical authority of that specimen can be entertained. It has been thought desirable to figure it (pl. 4, f. 5), since it presents certain peculiarities specified by Linnæus, which are not displayed in any published drawing that I can at present discover. Martini's figures 1380, 1381 form the nearest approach; these have almost invariably been referred to *M. ferruginea* (delineated by Swainson in plate 66, f. 2 of his first series of 'Illustrations'). The spotted colouring of the specimen ("incarnato" with Linnæus has the signification of orange rather than flesh-colour, as we learn from his account of the well-known *Strombus pugilis* in the 'Museum Ulricæ') is not the ordinary painting of *ferruginea*; and the recurvation of the outer lip, which is edged with conspicuous rounded tubercles, precisely accords with the features specified in the description: strictly speaking, there is a fifth obscure fold (Lamarck describes *ferruginea* as "subquinqueplicata"), but Linnæus was not wont to reckon any but the decided exterior ones.

## ***Voluta sanguisuga.***

Lamarck unfortunately has accepted Seba's figures as characteristic of the Linnean species; but these were only added in the twelfth edition, and disturb the previous harmony of the synonymy. The engravings originally cited—Gualtier's drawing, however, is rather uncertain—represent *Mitra stigmataria* (Reeve, Conch. Icon. vol. ii. Mit. pl. 3, f. 15), to which, alone of the two, the passage “Fasciæ anfractuum e punctis sanguineis distantibus” will correctly apply, and that shell is assuredly the rightful representative of the Linnean *Volute*. The term “quaduplicata” seems opposed to the “triplicata” of Lamarck's description; the lower or fourth fold, however, though much less conspicuous than the rest, is present in all my specimens, and the larger number has been properly assigned to it by Reeve. Neither *M. stigmataria* nor *M. sanguisuga* of Lamarck are to be found in the Linnean collection.

## ***Voluta Caffra.***

As the cited figure of Gualtier (misprinted 2 instead of E in the twelfth edition only) clearly represents the *Mitra Caffra* of authors, a shell which precisely answers to the description in both the ‘Museum’ and the ‘Systema,’ that species has, with justice, been accepted as the representative of the Linnean *Volute*. Seba's figures, moreover, are generally accepted as delineations of the same, and seem to have been drawn from some large polished specimens or the smoother variety. The *Mitra Caffra* (Encyclop. Méthod. Vers, pl. 373, f. 4) is still preserved in the cabinet of Linnæus, and alone suits his definition of the species.

## ***Voluta Florio.***

This species appears to have been quietly passed over by most writers, who, if they have mentioned it at all, have merely



transmitted the original description. As it was received from Spengler, it is passing strange that Chemnitz, who has availed himself so frequently of the rarities in the magnificent collection of that excellent conchologist, has not noticed it. Deshayes suggests, and with probability, that it was possibly a variety of the preceding, founding his belief on the quoted engraving. But unfortunately Linnæus has likewise annexed the same reference to *Caffra*, with which it agrees most fairly; and, as the illustrious French naturalist has himself observed, the number of columellar folds (an important feature) does not answer to the constant four of that well-known shell. Moreover, our author asserts that they are small, and that the body whorl is only adorned with a single inframedial white spiral line, with which, as the amended reading “instruunter” in the revised copy inform us (“etiam” was absurd with “destituuntur”), the smaller turns were also provided. In *Caffra*, on the contrary, two or three broadish ribbands (as in Seba’s figure) traverse the final whorl, and the folds are decidedly large: it is not impossible, then, that the reference was a misprint. If I might dare to understand the “Corpus testæ duplo crassius” as the “body-whorl twice as broad as in the other” I could almost fancy the *Turbinella leucozonalis* of Lamareck to have been intended, a shell of which, even at *his* later period, he failed to find undeniable representations, and of which there is an example in the Linnean cabinet: there is no evidence, however, that it has the least typical authority, since the name *Morio* does not appear in the list of *Volutes* possessed by our author. It is expedient to forget that such a species has ever been constituted.

### *Voluta vulpecula.*

This species was pictorially defined in the tenth edition of the ‘Systema,’ where a brief description harmonises with a not discordant synonymy. The figures of Gualtier and Rumphius, the only ones quoted either there or in the ‘Museum Ulricæ,’ represent the *Mitra vulpecula* of authors, which shell (Martini, Conch. Cab. vol. iv. pl. 148, f. 1366) alone of those contained in the Linnean cabinet—unless perhaps we should except the

already defined *Caffra*—adequately answers to the description of a species which we know, from his list, to have been possessed by Linnæus.

The language of the 'Museum Ulricæ' suits, in the main, the recognised features of this *Mitre*, yet it is by no means certain that the same species was there described: the "utrinque linea fusca terminata" after the "fascia alba" would apply better to *M. vittata* (as delineated by Kiener); it is to be remembered, however, that the character is not positively enunciated, but modified by a "sæpe."

The references added in the twelfth edition of the 'Systema' are both of them incorrect: Argenville's drawing looks more like *Mitra sanguisuga* (as delineated by Reeve); Petiver's was probably misplaced, for it is a fair representation of the next species (*plicaria*).

### *Voluta plicaria.*

Few species can more easily be recognised than the present one; since five, out of the six figures that were referred to, are excellent representations of the *Mitra plicaria* of authors, which agrees correctly with the descriptions of this *Volute* in both the 'Systema' and the 'Museum Ulricæ.' Another delineation of it "List. 820" has been added to the synonymy in the revised copy: the shell itself, too (Martini, Conch. Cab. vol. iv. pl. 148, f. 1362, 1363), is still preserved in the Linnean collection.

The figure of Rumphius represents an allied species; it is quoted by Lamarck for *M. corrugata*. The "labro lævi" must not be understood as equivalent to "labro intus lævi;" it is merely put antithetically to the "labro denticulato" of the succeeding species, the edge of whose lip has a toothed appearance.

### *Voluta pertusa.*

The synonymy of the twelfth edition includes figures of not less than three distinct *Mitræ*, one delineated by Gualtier, the

other two by Seba. The first I suspect to be meant for *fulva*, but it is a most uncertain and unsatisfactory drawing, and has been quoted for *versicolor*; the second (Seba, f. 28) is assuredly *digitalis* of Chemnitz; and the third (Seba, f. 47, 48) is apparently *sphærolata*. Now if Gualtier's figure had been better, the species would have been pictorially defined in the tenth edition, since it was the only illustration there quoted, and the characters of *fulva* answer to the very brief description. The longitudinal bands mentioned in the 'Museum Ulricæ' do not suit that species; but remind one rather of *terebralis* as figured by Reeve.

Of all the *Mitres* here enumerated, *digitalis* (Chemn. Conch. Cab. vol. x. pl. 151, f. 1432) alone is preserved in the Linnean collection. The specimen is a remarkably fine characteristic one, with the spiral punctures most strikingly developed: it agrees perfectly with the characters specified in the twelfth edition of the 'Systema;' and as the presence of *pertusa* in the Linnean cabinet is expressly declared, I entertain but little doubt of its being the true representative of that doubtful shell. The *M. cardinalis* has also been suggested as the original of the species; but Linnæus has either wholly passed over the various delineations of it in Gualtier, Seba and Lister, works habitually consulted by him, or referred them to another *Volute*: nevertheless that shell is the only one in the cabinet, besides *digitalis*, that at all answers to the definition of *pertusa*, and suits the 'Museum Ulricæ' better than its rival.

### *Voluta mitra.*

The synonymy of the two forms *episcopalis* and *papalis*, as it appeared in the tenth edition of the 'Systema,' was so correct that no difficulty has been experienced in recognising the supposed varieties in the *Mitra episcopalis* (Enc. Méth. Vers, pl. 369, f. 2) and *papalis* (Knorr, Délic. pt. 1, pl. 6, f. 1) of modern conchology. In the twelfth edition of the 'Systema' the G of the reference to Argenville was a misprint for the previous C; L of Gualtier (*M. scabriuscula*, teste Deshayes) was wrongly added, and f. 37 (*M. pontificalis*) of Seba erroneously included in the otherwise correct additional reference to that

author. Figure 33 of Regenfuss belongs to plate 3, not 5; that mistake, however, was not of a nature to mislead us.

These two species (of which *episcopalis* is still preserved in the Linnean collection) were, then, pictorially defined when they originally appeared, and must preserve their names despite of any subsequent alterations. Strictly speaking the "quadruplicata," first added in the 'Museum Ulricæ,' where the description is too inclusive, does not suit the coronated *papalis*, but is true of *pontificalis* and *episcopalis*; the two latter, then, should be considered the shells indicated in that work and in the twelfth edition of the 'Systema.'

### *Voluta musica.*

The *Voluta musica* of authors (Martini, Conch. Cab. vol. iii. pl. 96, f. 927, 928) is marked for this species in the Linnean cabinet. The description in the 'Museum Ulricæ,' and the abundance and peculiarly striking features of the shell, facilitated its correct determination. The reference to Seba's plate was inaccurately printed 5 instead of 57, and in the Vienna edition P erroneously took the place of F in the reference to Argenville. There is no Y in the twenty-eighth plate of Gualtier, though that letter was erroneously cited in the 'Museum Ulricæ' instead of the first of the two Z's. The painting of X in the same engraving is remarkable, and to me, at least, novel. "List. 805" has been added in the revised copy of the 'Systema.'

### *Voluta vespertilio.*

The *Voluta vespertilio*, in the comprehensive sense of the species as understood by Deshayes and Reeve, is identical with the species so named by Linnæus, whose synonymy embraces the varieties *mitis*, *pellis-serpentis*, &c. "Spinæ sæpius canaliculatæ" has been appended to the description in the revised copy of the 'Systema,' and plate 808 of Lister's 'Historiæ' has been correctly referred to as illustrative.

The *Voluta vespertilio* (Martini, Conch. Cab. f. 938) is still preserved in the Linnean cabinet, and exclusively agrees with the definition of the species.

### ***Voluta Hebræa.***

The majority of the references attached to this species should rather have been quoted for the preceding; some of them, indeed (Gualt. pl. 28, f. G, and Seba, pl. 57, f. 5) have actually been included in the synonymy of both. The referred-to drawings in the sixty-fourth plate of Seba's folio represent the *Voluta scapha*, but as the number of the columellar folds in both it and *vespertilio* is far less than is required by the diagnosis, naturalists have properly rejected these engravings as illustrative, and preferred those of Argenville, Bonanni and Seba, pl. 57, f. 1, 2, 3, 6, since they represent a shell, the *Voluta Hebræa* of authors (Knorr, Délices Yeux, pt. 6, pl. 15, f. 1), whose characters are in harmony with the specified features; their selection is corroborated by the additional reference of "List. 809" in the revised copy of the 'Systema.' No specimen of it, however, is preserved in the Linnean cabinet; the depth of the drawers would not have permitted its insertion.

### ***Voluta turbinellus.***

The correct determination of *V. Ceramica*, which is stated to resemble an elongated *turbinellus*, would naturally suggest the *Turbinella cornigera*, from the great similarity of the two allied congeners, as the representative of the present species. The selection, in the 'Museum Ulricæ,' of the figures in Gualtier, Argenville and Rumphius, which clearly were designed for that shell, adds strength to the recognition, since these are the only ones of those cited in the 'Systema' which indisputably represent it, though Seba's figure 8 and the wretched engraving of Bonanni have, also, been ascribed, and bear a certain degree of likeness to the same object.

Of Seba's drawings in his plate 49, the 76 has been referred by Lamarck to *capitellum*, but is described, in the text, as variegated. Regenfuss' painting, although, like the rest, it presents a general resemblance to the *Turbinella cornigera*—of which a specimen (Reeve, Conch. Icon. vol. iv. Turb. pl. 8, f. 40) is still preserved in the Linnean cabinet—was really intended for *Purpura hyppocastanum*. As some doubt may exist about the correctness of the term “quadriplicata” (though Lamarck also has attributed only four folds to its columella), it is worth mentioning, that the number of the plaits was not originally thus limited by our author.

The white variety with a produced spire, spoken of in the ‘Museum Ulricæ,’ was of course a distinct species.

### ***Voluta capitellum.***

This species was pictorially defined in the tenth edition of the ‘Systema,’ where it appeared as a *Murex*, by a reference to Argenville's figure of the *Turbinella capitellum* (Reeve, Conch. Syst. pl. 229, f. 5) and by a brief description that harmonised with it. An example of that shell is still preserved in the Linnean cabinet, and a rude delineation of it in Gualtier (at least it has been generally cited for it) is doubtfully (“t. 39, f. A?”) quoted, as illustrative, in the revised copy of the ‘Systema.’

Among the details particularised in the ‘Museum Ulricæ’ the passage “columella rugis 4 transversis” appeared, and that number of plaits was likewise attributed to the *Volute* in the twelfth edition of the ‘Systema.’ Now as there happen to be only three folds upon the pillar of *Turbinella capitellum*, we cannot safely refer to the two later publications of Linnæus in a correct synonymy of the species.

### ***Voluta Ceramicæ.***

The details and the synonymy in the ‘Museum Ulricæ’ clearly defined the object intended, which naturalists deter-

mined, with facility, from the number of excellent representations of it that Linnæus has quoted. He has not signified his own possession of a specimen, but has corroborated the received identification, by referring in his revised copy to plate 829 of Lister's 'Historiæ,' where the *Turbinella capitellum* of authors is depicted (Reeve, Conch. Icon. iv. Turb. f. 45). He has likewise noticed, and corrected, in one of his many copies of the 'Systema' (that decorated with his heraldic bearings), his erroneous reference to *Murex capitellum* in the 'Museum;' "n. 308. *Murex Ceramicus*" would be the proper reading. The 368 in the fourth line was a misprint for 286, as the numerals originally stood in the tenth edition. The synonymy thus amended becomes correct, unless we should object to the rude figure A of Rumphius's 'Thesaurus.'

### *Voluta pyrum.*

Although neither of the wretched figures that were quoted in illustration of this shell can be positively pronounced the *Turbinella pyrum* of authors (yet Rumphius has been quoted for it), nevertheless the ideal produced by both of them, when modified by the words of the description, so corresponds to the general aspect of that species, as to have caused its general recognition as the Linnean *Volute*. Examples (Chemn. Conch. Cab. vol. xi. pl. 176, f. 1697, 1698) of it are preserved in the Linnean collection, yet are destitute of authority as types, since their presence has not been declared in our author's lists.

### *Voluta Lapponica.*

As both of the figures cited in illustration of this shell exhibit the same *Volute*, one, moreover, which possesses the few characters required by the description, the species may be regarded as pictorially defined, and has been identified by all the principal writers upon conchology (Sow. Thes. Conch. vol. i. pl. 51, f. 68, 69, 70). The stated locality is erroneous, and the name somewhat objectionable, from conveying the false impression

that the species is a native of Lapland. The shell has consequently been termed *Indica* by Sowerby; it had likewise been previously delineated as *V. interpuncta* by Martyn, but in profound ignorance of its earlier appellation. Although the paintings in the 'Universal Conchologist' are very beautiful, and many of the species were new to science, it is still questionable how far the names of one who has indiscriminately dared to fabricate new appellations for every shell he has delineated, either regardless or unconscious of what had been done by his predecessors, may be deserving of precedence.

### *Voluta Æthiopica.*

Nearly all the crowned *Melon-shells* known at that period were included in the synonymy attached to this species in the twelfth edition of the 'Systema.' The engravings there referred to have been thus distributed by modern writers:

*M. Æthiopicus*, Rumph. pl. 31, f. A.—Gualt. pl. 29, f. I.—Argenv. pl. 20, f. F.—Seba, pl. 65, f. 4, 11; pl. 66, f. 6, 9.

*M. tessellatus*, Seba, pl. 65, f. 10.

*M. diadema*, Gualt. pl. 29, f. H. — Seba, pl. 65, f. 12; pl. 66, &c.

*M. armatus*, Rumph. pl. 31, f. B (teste Desh.).—Seba, pl. 65, f. 2 (teste Lam.).

Of these the two latter are excluded by the "quadriplicata" of the diagnosis; and as the second was not comprised in the earlier synonymy (neither in the tenth edition nor in the 'Museum Ulricæ') naturalists have very properly regarded the first as the intended typical form, not only because it solely agreed with the described features, but because, also, of the great preponderance of its representations, and the name itself having been derived from that previously applied to it by Argenville. The rude figure in Bonanni (pt. 3, pl. 1, copied in Lister's 'Historiæ,' pl. 797) has been ascribed to *tessellatus*, but, judging from the comparative erectness of its spines, approaches nearer to the shell delineated in Sowerby's 'Thesaurus' (pl. 82, f. 14) as a spotted variety of *Æthiopicus*. The *Melo Indicus* was eventually regarded as a variety!; for "Variat absque corona"



is written in his copy by Linnæus, and a gigantic marked specimen of it forms part of his collection.

### *Voluta cymbium.*

The *Cymba porcina* of authors (Broderip in Species Conchyl. Cymb. f. 6, g, h) is marked for this species in the Linnean cabinet, and accurately agrees with the description in the 'Systema,' and with one half (Adanson; Seba, pl. 65, f. 5, 6, and pl. 66, f. 5) of the figures referred to. Gualtier's engraving (the *C. cymbium* of authors) exhibits the same shape, but the "biplicata" of the 'Systema' clearly excludes it; Seba, pl. 66, f. 18 is doubtful, yet not so unlike the *C. olla* of authors, to which I should also refer Bonanni, f. 6, from which the locality was derived. Columna, though generally quoted for *C. porcina*, seems to me designed for an allied congener, the *C. proboscidalis*, the species probably intended in the 'Museum Ulricæ,' where, in opposition to the heading, "plicis 3 seu 4" were ascribed to its columella in the details. Gualtier's figure of *cymbium*, though the only figure there cited, is declared, in that work, to be merely an approach to the species intended; it is somewhat strange that Bonanni's representation (pl. 3, f. 2) of *proboscidalis* was not mentioned in place of it.

### *Voluta olla.*

The *Cymba olla* of modern writers, whose pillar is traversed by only two folds, cannot possibly be the Linnean *Volute*, whose columella is declared, in both the 'Systema' and the 'Museum Ulricæ,' to be furnished with four ("quadriplicata"): the "apex obtusissimus, derasus," too, of the last-named publication is utterly inapplicable to the mammillary projection upon its summit. Hence the synonyms of Aldrovand, Columna, f. 6, Lister and Klein (whose engraving was copied from the very figure in Bonanni which is quoted for the preceding species), cannot be regarded as illustrative, since they represent a shell, the characters of which are not in harmony with those described.

We must seek, then, in the remaining references, for a *Cymba* which will accord with the specific diagnosis. Unfortunately there are two, if not three, more members of that genus represented, *C. Neptuni* (Adanson and Columna, f. 4), *C. proboscidalis* (Bonanni, f. 2; from hence the locality was copied), and, perchance, the fry of the pseudo *C. cymbium*, at least the engraving of Argenville has been quoted by Lamarek for it.

As to Gualtier's delineation, it combines the shape of *olla* with the four plaits of *Neptuni*; it is a broken shell, and one I hesitate to pronounce upon, though usually ascribed to the former. This, and the fry exhibited in Argenville's work, are the sole figures cited in the 'Museum Ulricæ,' where the "obovata" suits not the shape of either *proboscidalis* or *cymbium*. There is a fair probability, then, that the *Cymba Neptuni*, which correctly answers to the description in the 'Museum,' and of the three mentioned species comes nearest to the ejected delineations, was the *V. olla* of that work; but whether it may be desirable or not to alter the established nomenclature I presume not to decide. Assuredly, however, the *Cymba olla* of authors cannot be termed the *Voluta olla* of Linnæus.

The collection, as usual when species are very large, does not contain an example of *Neptuni*, which, judging from Karsten's reference (Mus. Lesk. i. p. 227) to figure 767 of Martini, was regarded by him, at least, as the *olla* of Linnæus.

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## BUCCINUM.

### **Buccinum olearium.**

By some error the numerals 438, which appertain to *olearium* in the twelfth edition, have been written upon a young specimen of the next species. This was probably a slip of the pen for

439, but the example is of no typical authority, in any case, since our author clearly did not possess the species when he wrote the 'Systema,' for he has omitted the name in the lists appended to both editions of it. It is requisite, then, to carefully investigate both the cited figures and descriptions. The engraving of Petiver represents *Dolium fimbriatum*, a shell which is excluded by the "apertura edentula" of the diagnosis; similarly the *Dolium olearium* of authors, fairly delineated by Rumphius (and this figure was queried, as uncharacteristic, by Linnæus), and more doubtfully so by Gualtier, is excluded by the passage "sulcis obtusis lineola elevata interstinctis." Bruguière, who animadverted upon this discrepancy, nevertheless yielded to that traditional recognition by Schröter, &c., which was based upon the figures only; and the majority of writers have followed in his wake. Crouch, however, in his 'Introduction to Lamarek's Conchology,' has figured (pl. 19, f. 2) a shell (*Dolium zonatum* of Green, Albany Instit. vol. i. p. 131, pl. 4; *D. crenulatum* of Philippi, Abbild. Conch.) that precisely answers to both the description and the locality of the Linnean shell. As no engraving of it was extant at the date of our author's publication, it is not surprising that his synonymy was erroneous. A superb example of it was found along with the larger Linnean shells, but it may be doubted whether it was not of subsequent introduction. Either, then, we must regard that shell as the pristine *olearium*, or entirely omit the name as a Linnean species.

### **Buccinum galea.**

From the vast magnitude ("sæpe capitis humani"), the Mediterranean locality, and the correctness of the synonymy, it was impossible not to recognise this species in the *Dolium galea* of authors (Reeve, Conch. Icon. vol. vi. Dol. pl. 1). A young example of it is still preserved in the Linnean cabinet, but in place of 439 has been carelessly marked 339, which numerals, in the twelfth edition, indicate a *Cowry*! and in the tenth edition a species (*Bulla pallida*) that we know from our author's catalogues he did not himself possess, and one, moreover, whose characteristics do not at all suit the specimen.

Some one has written *galea* upon an example of the *Dol. olearium* of Lamarck and Bruguière; but that shell will not answer to the combined descriptive and pictorial definition of the species.

### **Buccinum perdix.**

The cited engravings of Bonanni, Rumphius, Gualtier, Argenville, &c., too clearly represented this common shell for naturalists to err in its identification. The *Dolium perdix* of authors (Martini, Conch. Cab. fig. 1079) is marked for the species in the Linnean cabinet. The erroneous reference to Lister has been correctly changed by Linnæus, in his revised copy, to "984." Seba (pl. 68, f. 16) represents a *Dolium*, which is considered by Green to be his *D. plumatum*, which latter is referred to *perdix*, as a variety, by Reeve.

"*Columella perforata, fragilis. Jamaica*" has been written in the proposed new edition of the 'Systema.'

### **Buccinum pomum.**

The *Dolium pomum* (Martini, Conch. Cab. pl. 36, f. 370) of authors is marked for this species in the Linnean cabinet. The language of the 'Museum Ulricæ' respecting it, and the engravings referred to, rendered its determination both early and easy.

"List. 792" has been correctly quoted by Linnæus, in his revised copy of the 'Systema,' where, also, he has written "*colum(ella) vix perforata.*"

### **Buccinum dolium.**

The *Dolium maculatum* of modern conchologists (Sowerby, Conch. Manual, fig. 420) is marked for this species in the Linnean cabinet. Our author confused with it the *Minjac* of Adanson (*D. fimbriatum*, Sow.), which, from the language of the

'Museum Ulricæ,' and the referred-to figures, has, at the least, an equal claim to be considered the *Buccinum dolium* of Linnæus. This admixture proves but of little importance, as the name "*dolium*" is no longer a specific, but a generic, appellation. The synonymy is very incorrect, Seba's figures of the succeeding (t. 70, f. 2) and preceding (t. 70, f. 3, 4) species having been most carelessly included in it. The "89" in the reference to Gualtier was merely a misprint for "39," the reading in the earlier edition of the 'Systema' and in the 'Museum Ulricæ:' the error did not escape the eyes of Linnæus, who has corrected it in his own copy.

### **Buccinum echinophorum.**

The *Cassidaria echinophora* of the 'Animaux sans Vertèbres' (Kiener, Coq. Viv. Cassid. pl. 1, f. 2) is marked for this species in the Linnean collection. The synonymy is correct, except that figure 18 of Bonanni, being too bad for recognition, should not have been cited. Linnæus, in his revised copy, has added "col(umella) explanata," and changed "prominente" to "ascendente." In the Vienna edition the reference to Argenville is misprinted 24.

### **Buccinum plicatum.**

Linnæus did not possess this species, and, as was usually the case when this occurred, has added nothing further relative to it in his manuscripts. I am compelled to differ from the views of that eminent conchologist Deshayes, who imagines it to have been identical with the *Cassis plicaria* of Lamarek. I find no grounds whatsoever for the supposition, since not one of the cited figures represents that shell, though our author, had he desired it, could have quoted an admirable portraiture of it in Seba's 'Museum' (vol. iii. pl. 53, f. 1), a work that he has peculiarly referred to for his representations of the *Cassides*. Of the synonyms the nearest approach to *plicaria* is Argenville's representation of *zebra*, which figure is the very one queried by

Linnaeus as bearing the least resemblance to the object described. Bonanni 156 has been quoted by Lamarck for *C. flammea*, to which, indeed, his second figure has some likeness; the first reminds one more of *spinosa* (= *fasciata*), which, however, suits not the definition; assuredly it was not meant for *plicaria*. Another representation of *flammea* may also be met with in the referred-to drawing of Seba, and even Gualtier's engraving, though generally believed to be meant for a variety of *tuberosa*, might pass almost equally well for that species; it is, indeed, a very uncertain figure. In addition to the above, we find Bonanni 161, in lieu of 156, referred to in the earlier edition of the 'Systema;' this represents *C. crumena* (a variety of *testiculus*), but was quoted in the same edition for *flammea*, and suits not the "decussatim substriata" of the diagnosis. It is not impossible, then, that as the description of *flammea* harmonises best with an immature individual of that species, and the extant delineations of adult examples were not quoted for it, that an aged specimen of that shell was the original of *Buccinum plicatum*, but, as this is conjectural, it is far better to omit the species as too inadequately defined for positive identification.

### **Buccinum cornutum.**

Our author has not indicated his possession of this huge and common helmet-shell, which is known to be a *Cassis*, from the circumstance that all the cited engravings represent members of that genus. The "scrobiculis punctata," by limiting the illustrative figures to such only as possess that character, confines the species to that generally recognised as *C. cornuta* (Kiener, Coq. Viv. Cas. pl. 2, f. 3), a shell which likewise answers to the details of the 'Museum Ulricæ.' The synonyms have been generally accepted as accurate, except that of Rondelet, which Deshayes thinks more like the *C. tuberosa*. In his revised copy Linnaeus has added "Aperturæ lab(ium) callo explanato."

### **Buccinum rufum.**

The *Cassis rufa* of authors (Kiener, Coq. Viv. Cas. pl. 7, f. 12, 13) is marked for this species in the Linnean cabinet. The synonymy being very nearly correct (Seba, pl. 73, f. 2, can alone be excepted), the shell, being described at large in the 'Museum Ulricæ,' was recognised with facility by naturalists at an early period.

### **Buccinum tuberosum.**

The *Buccinum tuberosum*, as it appears in the twelfth edition of the 'Systema,' is a recognisable species, thanks to the admirable engraving of Gualtier, which is there referred to as illustrative. As the shell there delineated is decidedly the *Cassis tuberosa* of authors (so too is one of the two figures in Labat's 'Voyage'), of which the characters are not in opposition to the very brief diagnosis, we may regard the species as pictorially defined. I should not venture, however, to cite, as identical, the Linnean *Buccinum* thus named in the tenth edition (where Gualtier, though habitually consulted by Linnaeus, was not referred to, and where his figure was queried for a variety of *echinophorum*), nor that of the 'Museum Ulricæ,' where the account of its aperture does not coincide with the characteristics of that part in the *Cassis tuberosa*; neither of these two, however, even if different, can be identified; hence the acceptance of the subsequent definition. The addition of "Apex suturis membranaceis" in the revised copy favours the received opinion.

The shell, being too large for the drawers of the Linnean cabinet, is not retained with the rest of the specimens, but a marked example (Seba, Mus. vol. iii. pl. 73, f. 2) is still preserved in the Linnean Society's Museum, apart from the other specimens. Unfortunately, however, a large example of *Cas. labiata* (List. Hist. Conch. pl. 1108), a species usually confused with *cornuta*, has been inscribed with the same numerals.

### **Buccinum flammeum.**

Two very distinct *Cassides*, the *C. flammea* of authors, and the *C. crumena* (now generally regarded as a variety of *testiculus*), were indicated by the respective references to Rumphius and Bonanni, and from the extreme brevity of description affected in the 'Systema' would about equally suit the definition. As the rude drawing of Bonanni, however, was quoted also for *B. plicatum* in the tenth edition, it may be presumed not to have been very characteristic of either: it has been rejected in the 'Museum Ulricæ,' where, indeed, the "articulata suturis" would have been wholly inapplicable to the shell represented by it. Hence naturalists, from the account in that publication being in harmony with the only engraving there cited as illustrative, have selected the *Cassis* delineated by Rumphius (*C. flammea*, Sowerby, Genera Shells, Cas. f. 2) as the representative of the Linnean species. It seems somewhat strange, however, that Linnæus (who has not recorded his own possession of an example) should not have referred also to Seba, vol. iii. pl. 73, f. 10, 11, 14, 15, 19, 20; most of those figures, however, exhibit the shell in its maturity, in which stage it does not appear, from the remark "Distinguendum a *B. rufo*, quod nodi nulli in dorso, nisi circa collum," to have been known to him, at least by this appellation.

### **Buccinum testiculus.**

The *Cassis testiculus* of authors (Crouch, Introd. Lam. Conch. pl. 18, f. 7, a) is marked for this species in the Linnean cabinet. In the 'Museum Ulricæ' the synonyms are accurate, and the description characteristic; but the "lævigata" in the 'Systema,' though clearly meant, from the context, to denote merely the absence of knobs and folds, might readily mislead one; so too might the description of the pillar lip. Plate 73, f. 19, 20 of Seba's 'Museum' represent the preceding shell; the references are otherwise correct. In quoting that work our author has



continually annexed to the species he was defining the references also, which should have been attached to the adjacent one. I cannot help suspecting, then, that as his own library was not adorned with a copy of that costly publication, he had formed a list, when the opportunity occurred to him of consulting its pages, of all the species named by him there delineated, and has exhibited his usual carelessness of transcription in the distribution of the figures.

“Col(umella) adglut(inata), p(er)for(ata); lab(ium) exte(rius) extus maculatum” has been added in the revised copy of the ‘Systema.’

### **Buccinum Decussatum.**

“List. 1000” has been rightly added to the synonymy in the revised copy of the ‘Systema.’ The *Cassis decussata* of authors (Kiener, Coq. Viv. Cas. pl. 15, f. 31) is present, as declared, in the Linnean cabinet, and alone agrees with the combined description and synonymy. The details of the ‘Museum Ulricæ’ clearly indicate that species, which is the one represented by Gualtier, Bonanni and Lister, though Lamarck has erroneously ascribed the two last figures to *C. abbreviata*. The “labium interius punctis eminentibus” suits, indeed, *abbreviata* far better, and there is little doubt, although that passage is explained in the revised copy by “Col(umella) explan(ata) punctato-rugosa: corpus varicosum,” that our author, who possessed them both, confused the two allied congeners. Since, however, no delineation of the latter was cited, and the unillustrated description in the ‘Systema’ is utterly insufficient for the determination of any species, it is far better to confine the name to that shell which is clearly pointed out to us in the ‘Museum Ulricæ.’ The reference to Rondelet must be expunged.

### **Buccinum arcola.**

As well from the synonymy and the widely remote localities, as from the expressions “Alia striata est, alia lævis,” it is mani-

fest that Linnæus confused more species than one under this appellation. Even in the 'Museum Ulricæ' the "Variat color fasciis flavescentibus" ("Rumph. t. 25, f. 2" = *C. zebra*) and the "Variat labio interiore papilloso" evidence that our author's ideas of the comprehensiveness of this species were very latitudinarian. As these characters, however, were clearly intended for the varieties, and not for the typical or more fully described form, naturalists have not improperly confined the name to the shell figured by Rumphius (25, f. B, 1), from whom the specific epithet was borrowed. That *Cassis*, moreover, is the one indicated by the majority of the references (Rump. f. B, and 1.—Gualt. 39, f. H, not well.—Seba 70, f. 8, 9.—Argen. 18, f. I), and which best agrees with the additional "Testa varicosa: col(umella), explan(ata), rugos(a)" of the revised 'Systema,' where the deceptive "quadrifariam" (which does not even suit the species confused with it in the synonymy) has been erased. Klein's cited drawing was copied from Bonanni's wretched engraving; both have been generally quoted for *C. areola*, and suit it as well as any other known species. Gualtier, f. G, has been referred by Lamarck to *C. saburon*; the figure, however, is more elongated than the *saburon* of Adanson, and looks more like the *C. pila* of Reeve's Monograph.

The *Cassis areola* of authors (Kien. Coq. Viv. pl. 10, f. 19) is still preserved in the Linnean cabinet.

### **Buccinum erinaceus.**

The *Cassis vibex*, var. *erinaceus* of Reeve (Born, Test. Cas. Vind. vign. 238, f. D) is marked for this shell in the Linnean cabinet; and in the revised copy of the 'Systema' "List. 1015" is rightly added to the published synonymy, which, except that figure 11 in Seba represents the allied *C. torquata* of Reeve, is not inaccurate. Our author, who proposed to place this and *vibex* next to each other in his intended new edition, has added the following passage to his former description: "Col(umella) adglut(inata), p(e)rforat(a); lab(rum) extus maculatum."

I do not consider the *Cassidea erinaceus* of Bruguière identical; it is the *B. biarmatum* of Dillwyn (Schröter, Einl. i.

pl. 2, f. 9.—Seba, pl. 53, f. 11, 29), and, judging from the figure in the ‘*Conchologia Iconica*’ (Cas. f. 1, c.), the plaited form of the *C. torquata* of Reeve.

### **Buccinum glaucum.**

The *Cassis glauca* of authors (Sow, Genera Shells, Cas. f. 1) is still preserved in the Linnean cabinet, and alone of the shells present agrees with the definition of the species. “List. 996, f. 60” has been added to the synonymy in the revised copy of the ‘*Systema*.’ and, as well as those published, rightly appertains to the shell described. The allied species *C. coronulata* appears to be delineated by Seba in plate 71, f. 13, 15.

### **Buccinum vibex.**

A specimen (Martini, Conch. Cab. vol. ii. pl. 35, f. 364) of the *Cassis vibex* of authors (misprinted *vipe*x in the Vienna edition) is still preserved in the Linnean cabinet, and alone agrees with the combined description and synonymy. The species has been readily determined, owing to the detailed account of its features in the ‘*Museum Ulricæ*,’ where the observation, that the surface is occasionally subnodulous above, modifies the “*lævi tota*” of the other publication. The cited engravings of Regenfuss, Gualtier, Seba, Rumphius and Argenville represent the species: the last-named conchologist has delineated a peculiar bivaricose state, which is also exhibited in figure 9 of the referred-to plate in Rumphius. Bonanni’s is a wretched engraving, but was probably meant for a variety of this shell; it would suit the form *erinaceus* far better.

“Col(umella) adglut(inata,) lævi(s,) imperforat(a); labium extus maculatum” has been added in the revised copy.

### ***Buccinum papillosum.***

The *Buccinum papillosum* of authors (Sowerby, Genera Shells, Buc. f. 5) is marked for this species in the typical collection. Linnæus, in his revised copy of the 'Systema,' has enlarged the correct synonymy by the addition of the reference "Gualt. t. 44, f. G." He has also grouped together the *Nassæ* by the following manuscript remark "455—461 in fauce seu columella superne dens unus," and has appended "Java" as a locality for this shell.

### ***Buccinum glans.***

The *Buccinum glans* of authors (Kiener, Coq. Viv. Buc. f. 52) is marked for this species in the Linnean collection. The admirable description in the 'Museum Ulricæ,' which is explanatory ("denticulo ad basin et apicem," M. U.) of the inappropriate "bidentato," together with the correctness of the synonymy, enabled naturalists to readily determine this most elegantly painted shell. Aware of the inadequacy of his description in the 'Systema,' Linnæus had proposed to enlarge it by the following addition: "Albida, cincta—lineis testaceis; col(umella) adglutin(ata,) imperf(orata). Faux unidentata." The variety "tota atra, labio crasso" (M. U.) was assuredly a distinct species, and perchance *N. olivacea*.

### ***Buccinum arcularia.***

The *Buccinum (Nassa) arcularia* of Deshayes (*arcularia*, var. *a* of Lamarck.—Kiener, Coq. Viv. Bucc. f. 115) is marked for this shell in the Linnean cabinet. Deshayes has justly separated the variety *b* of Lamarck as a distinct species, and has proposed for it the name *Rumphii*. It is somewhat remarkable that, although the *Nassa Rumphii* was delineated in the same plates

(Gualt. f. P.—Seba, f. 34, &c.) with *arcularia* proper, Linnæus has not confused these two closely allied congeners in his synonymy, which is so correct that the R of Gualtier alone is doubtful, and that figure was assuredly not intended for *Rumphii*. “List. 970, f. 24” has been rightly quoted as an additional reference in the revised copy, where our author has also appended “Faux unidentata, striata lab(ium) ext(erius) postice subdentatum” to his published description. The rude figure of Rumphius, though quoted by Lamarck for his variety *b*, seems to me more like *arcularia* proper.

### **Buccinum pullus.**

From the extreme shortness of the diagnosis, and the erroneous multiplicity of conflicting delineations, it is not surprising that very different-looking *Nassæ* should have been designated by the same appellation, in the works of various authors, so that it really becomes difficult to say what is the modern received notion of the Linnean species. The “Totombo” of Adanson is held by Deshayes, and I suspect by Schröter (I know not wherefore, unless from the likeness it bears to the also cited N of Gualtier’s folio), to be the typical *pullus*; the “ultimo ad angulum trituberculato” of Lamarck is not exhibited in these figures, to which Kiener’s *pullus* bears not the slightest resemblance. In the revised copy of the ‘Systema’ the characters “acuminata,” “labio exteriore dentato” and “faux unidentata” have been added to the meagre particulars previously enumerated, and the reference to Lister rightly changed to 971 (to which, indeed, figure 26 belonged).

The *Buccinum* (*Nassa*) *Thersites* of Kiener’s Monograph (Coq. Viv. Buc. f. 113) is present in the Linnean cabinet, and of the shells therein preserved (and *pullus* is declared to be in the collection) alone answers to the description of this species. Moreover, this and the succeeding *Buccinum* were found placed together in a box marked as containing both of them, so that no doubt can be entertained as to what shell was designed by our author. The synonymy, added only in the twelfth edition, is most incongruous; nearly every engraving displays a different shell; Lister, f. 26, alone can be retained.

### **Buccinum gibbosulum.**

The box marked for this and the preceding species in the Linnean collection contains examples of the *B. gibbosulum* of authors (Kiener, Coq. Viv. Buc. f. 116, too elongated), and of the *B. Thersites* of Bruguière. As the “*lævi*” of the diagnosis suits not the latter, whilst the entire description is applicable to the former, it is clear that the species has been rightly identified. “*Faux unidenta(ta) lævi(s.)*”, added by Linnæus in his revised copy, further supports the received opinion, the smoothness of the interior in *gibbosulum* and its denticulation in *Thersites* being an easy mark of distinction between these hump-backed congeners. The cited figure of Gualtier has been generally accepted as a delineation of this species; Seba’s drawing, on the contrary, most decidedly represents *Thersites*, and was either misplaced, or, being a dorsal view only, mistaken for the other: it was only added in the twelfth edition.

### **Buccinum mutabile.**

The figure of Gualtier, being in harmony with the locality and description, enabled naturalists to determine this common Mediterranean shell with facility and certainty. The *Buccinum* (*Nassa*) *mutabile* of authors (Kiener. Coq. Viv. Buccin. f. 93) is still preserved in the Linnean cabinet, and alone suits the definition of the species. “*Faux unidentata striata*” was designed to have been added to the description in the proposed new edition of the ‘Systema.’

### **Buccinum Neriteum.**

The accuracy of the description, and the correctness of both the synonymy and of the assigned locality, left no possibility of this strongly featured and abundant shell being confused with any other. The *Buccinum Neriteum* of authors (Kiener, Coq.

Viv. Buccin. f. 120) is still preserved in the Linnean collection, and alone of those present agrees with the definition of the species.

### **Buccinum harpa.**

Not only are almost all the known *Harpa*-shells comprehended in the synonymy of this species, as published in the ‘Systema,’ but they equally suit the brief description which accompanies it in that work. This fortunately matters very little, since the term *Harpa* has now become a generic epithet. The *H. nobilis*, *ventricosa* and *minor* are all contained in the Linnean cabinet. Of these, the first has the best claim to be considered the typical form of the ‘Museum Ulricæ;’ since, of the eight figures there quoted, five are habitually referred to it; of the other three, Rumphius, f. M, which represents *H. minor*, is excluded, as illustrative, by the “ovata” of the description, and the *H. ventricosa* (Rumph. pl. 32, f. K) possesses not the lineated painting ascribed to the ribs of *harpa* in that work. The eighth (Gualt. 29, f. D) seems intended for *H. articulata*, a shell whose outer lip is not usually denticulated (“labium exterius — denticulatum”), at least, in ordinary cabinet specimens.

### **Buccinum costatum.**

When Linnæus first published this species he felt so doubtful of its distinctions being of specific value that he omitted to reckon it as a species, but placed it, with a cypher attached, between Nos. 400 and 401 in the tenth edition of his ‘Systema.’ The utter insufficiency of the description needs no comment. Yet, since all the known delineated *Harps* of that period were comprised in the synonymy of the last species, to which we are told this is precisely similar, save that the ribs, in place of being moderately apart (“distinctis”), are crowded together (“confertis”), there can be little doubt that the *Harpa imperialis* of Lamarck (Sowerby, Genera Shells, *Harpa*, f. 1) was the shell

designed: the voice of tradition sanctions the supposition. The name, however, is peculiarly inappropriate in a genus where all the species are ribbed. Its absence from the Linnean collection is rather confirmatory of, than adverse to, the received opinion, since it has not been indicated as present in any list of our author's shells.

### **Buccinum Persicum.**

The details mentioned in the 'Museum Ulricæ' enabled naturalists to recognise this species in the *Purpura Persica* of authors. A specimen of that shell (Knorr, *Délices*, pt. 3, pl. 2, f. 5) is still preserved in the Linnean cabinet, and alone agrees with the combined synonymy and description in that work. The cited drawing of Rumphius (very ill executed, yet not so unlike *P. haustum*) has been rightly erased in the copy of the younger Linné: Grew's figure belongs to the next species.

Linnaeus in his revised copy has added "faux striata" and "List. 987, f. 46 & 988": the former figure is that of *Persica*, the latter of *Rudolphi*, which was likewise confused with *Persica* in the twelfth edition of the 'Systema,' by the erroneous reference to figures 12 to 16 in Seba's folio. The name was taken from Argenville, whose engraving is very characteristic.

### **Buccinum patulum.**

The *Purpura patula* (Sowerby, Gen. Shells, Purp.) of authors is marked for this species in the Linnean cabinet. Our author's descriptions of it are not particularly good, but the species was easily determined by its synonymy, which is much more accurate than usual. Nevertheless, Gualtier, f. D, must be excluded, and the f. A (*P. hæmastoma*) of the same plate, which letter, however, was only quoted in the 'Museum Ulricæ.' In the revised copy of the 'Systema' "pluribusve" has been added after "cingulo triplici," a very desirable improvement of his brief description. The reference to Lister's plate was misprinted 988 in the Vienna edition.



### **Buccinum hæmastoma.**

The *Purpura hæmastoma* of authors is marked for this species in the Linnean cabinet. The specimen (Kiener, *Purpura*, f. 79), an ordinary Mediterranean one, has the four usual rows of knobs, but as the two upper ones are far more conspicuous than the lower series, our author has only mentioned the “*duplici fascia nodosa.*” Gualtier’s figure and the stated locality being both accurate, this abundant shell was correctly determined at an early period.

### **Buccinum lapillus.**

Naturalists easily identified this shell by the excellent figures of it in Lister, and the reference to the ‘Fauna Suecica.’ Adanson’s engraving is also very like it, yet one feels surprised at the species ranging so far South as Senegal. Réaumur’s ‘Mémor’ has been likewise correctly cited (Act. Paris), although his name does not appear in the ‘Systema.’ The *Purpura lapillus* of authors (Kiener, *Purpura*, f. 77, f. l, o, q) is present in the Linnean cabinet, and alone of its contents agrees with the combined description and synonymy. “*Colore variat*” and “List. 965, f. 19” were intended to have been added in the proposed new edition of the ‘Systema.’

### **Buccinum smaragdulus.**

The *Turbinella rustica* (*Turb. smaragdulus*, Reeve, Conch. Icon. vol. iv. *Turb.* pl. 3, f. 18) of Lamarck is marked for this shell in the Linnean collection, and agrees with its description in the ‘Museum Ulricæ,’ with the cited figures of Seba, and with “List. t. 831,” which has been added to the synonymy in the revised copy of the ‘Systema,’ where Linnæus has also written “*cineta lineis albis et purpurascentibus confertis,*” and indicated “Bengal” as the locality. The name is unfortunate,

being derived from Argenville, whose delineation probably reminded Linnæus of a short stunted example of his species: the shell there intended, however, was a gorgeously iridescent *Turbo*! One feels surprised that Gualtier, plate 113, figure X, was not referred to in preference, for his delineation of *rustica* is not uncharacteristic.

### **Buccinum spiratum.**

No less than three species of *Eburna*, *E. areolata*, *spirata* and *lutosa*, have been marked for this species in the Linnean cabinet. This might have been anticipated from the “Variat anfractu suturæ l. rotundato,” and from the illustrative references in the two principal editions of the ‘Systema,’ as well as in the ‘Museum Ulricæ.’ The synonymy, indeed, includes two species (perhaps more, for Gualtier’s outer figure B differs from any *Eburna* known to me), the *Eburna areolata* (represented by Bonanni, f. 70, Rumphius, f. C, and Seba, f. 23, 26), and the *E. spirata* of authors, to which most, if not all, the other figures belong. The meagre description in the ‘Systema’ will equally apply to either: not so the details of the ‘Museum,’ where the “Color albidus, maculis ferrugineis triplici serie digestis” pertains to *areolata* solely. It was fitting, therefore, since the name must be restricted to one species exclusively, that the preference should have been given to that shell (Kiener, Coq. Viv. Ebur. pl. 2, f. 3), which alone answers to the characters specified in all the works of Linnæus. Unfortunately for science, Lamarck, who rarely, if ever, consulted the original editions of our author, has not followed this rule; and subsequent writers have abided by his identification.

### **Buccinum glabratum.**

Two very dissimilar shells, the *Ancillaria glabrata* of Sowerby’s ‘Species Conchyliorum’ (Anc. f. 61), and the *Eburna Zeylanica* of the ‘Animaux sans Vertèbres,’ are confused together in the synonymy of the ‘Systema;’ but the

“anfractibus obsoletis,” and still more the entire description and cited delineations in the ‘Museum Ulricæ,’ clearly belong to the former alone. Hence the misleading references to Klein and Lister must be erased; the latter, indeed, was expunged by Linnæus himself, in his revised copy, where the columella was more fittingly described as “canaliculata.” The *A. glabrata* is still preserved in his cabinet, where it exclusively agrees with the amended definition. The reference to Columna, whose rude figure seems designed for *Buccinum mutabile*, must also be expunged.

### ***Buccinum prærosum.***

The *Melanopsis prærosa* (plate 2, fig. 5) still remains in the marked receptacle of this species in the Linnean cabinet. Although the examples are small, and peculiarly eroded at the apex, they still exhibit the characteristic retusion beneath the sutures, which distinguishes this Spanish species from its Grecian and Syriac congener *M. Buccinoides*. Férussac, however, in his Monograph of the genus *Melanopsis*, from not regarding this peculiarity as of essential importance, has indicated the Linnean shell as a mere varietal form of the latter, which is synonymous with the *M. lævigata* of Lamarek, a species whose very brief diagnosis might, indeed, comprehend in it the *M. prærosa*, but whose pictorial definition restricts it to that far better known *Melanopsis*. The name as originally written was *præmorsum*.

### ***Buccinum undosum.***

The *Buccinum undosum* of Kiener's Monograph (Coq. Viv. Buc. f. 41) is present in the Linnean cabinet, and best, if not solely, agrees with the definition of this species. Klein represents the *Triton clandestinus*, which suits not the “obtuse quinquangulæ” of the diagnosis; the other synonyms bear much more resemblance to the species, and have been generally accepted for representations of it. The details in the ‘Museum

Ulricæ,' where the erroneous reference to Klein was omitted, harmonise correctly with the characters of the shell. "Fauce" replaces "labro intus" in the revised copy of the 'Systema.'

### **Buccinum bezoar.**

The *Purpura bezoar* of Kiener's Monograph (Coq. Viv. Purp. f. 49) is marked for this species in the Linnean cabinet, and admirably agrees with the description. "Faux striata" has been appended to the published account, in the revised copy of the 'Systema.' The reference to Argenville was erroneous.

### **Buccinum glaciale.**

The poverty of the known Fauna of Spitzbergen, and the details of the 'Fauna Suecica' enabled naturalists to recognise this species, although both briefly defined in the 'Systema' and destitute of any pictorial illustration. The boreal species so named, its traditional representative (Kiener, Coq. Viv. Buccin. pl. 2, f. 4) answers very correctly to the requirements of the definition. It is not, however, present in the Linnean collection, where no shell can be described that adequately agrees with the published description.

### **Buccinum undatum.**

The *Buccinum undatum* of authors (Kiener, Coq. Viv. Buccin. f. 5) is marked for this species in the Linnean collection. The accurate synonymy has been enlarged in the revised copy of the 'Systema,' by a correct reference to plate 962, f. 14, of Lister's 'Historiæ.'

### **Buccinum reticulatum.**

This *Buccinum*, as it originally appeared in the tenth edition of the 'Systema,' was a recognisable species, since Gualtier

alone was quoted in illustration of it. Of the three figures referred to in his cited plate, G (which has been properly erased by Linnæus in his own copy) represents the *B. papillosum*, and is excluded, as illustrative, by the "transversim striata" of the description. The other two are generally admitted to have been intended for the *B. (Nassa) reticulatum* of authors, and being in harmony with the letter-press, clearly define the intended species. That shell (Kiener, Coq. Viv. Bucc. f. 91) is still preserved in the Linnean collection, and upon the whole, of those present, best corresponds with the described features, stated size, and European locality. Of the additional synonyms inscribed in the twelfth edition of the 'Systema,' several (Bonanni; Petiver, pl. 64, f. 8; Adanson?), although they remind one of the species by their delineated sculpture, must be rejected as fallacious; Lister, however, with Petiver, pl. 75, f. 4, and Réaumur in the 'Act. Paris.' (or more properly 'Hist. Acad. Sciences Paris') represent the European species. "Col(umella) adglutin(ata)" has been added in the revised copy.

### **Buccinum nitidulum.**

As the figure of Gualtier represents a *Columbella*, one might naturally expect that the *B. nitidulum* was a member of that genus. Unfortunately, however, the figure referred to, which cannot positively be identified with any species, neither exhibits the bands nor the longitudinal corrugations that are attributed to the species. It is not surprising, then, that, puzzled by this discrepancy, naturalists have failed in determining this doubtful shell. The *C. nitida*, indeed, has been suggested, but in place of being "fasciata" and "longitudinaliter striato-rugosa," is speckled or mottled, and perfectly smooth; the produced shape of it, moreover, reminds one rather of the B than of the C of Gualtier's cited engraving. Bruguière's surmise, that the Linnean shell might be found in the *Bigni* of Adanson, would not be unreasonable, if one might venture to understand "striato-rugosa" as painted with wrinkle-like lines, "striata" having the sense of "lineata" in the next diagnosis. In that case, perchance, no shell in the Linnean collection would agree better

with the definition. The expression, however, if not modified (as in *lævigatum*) by an allusion to its smoothness of surface, will not bear that signification; hence the recognition, however plausible, cannot be insisted upon. If we boldly reject the ill-harmonising figure of Gualtier, and, regarding the proximity of the species in the 'Systema' to *Nassa reticulata*, look to the *Nassæ* of the Linnean collection, we shall find that *Nassa Cuvieri* of Payraudeau (Moll. Corse, pl. 8, f. 17, 18) precisely accords with both description and locality, and exhibits a character, "*spiræ plicatæ*," incidentally assigned to it by the denial of that feature to *lævigatum* in the contrast between the two species. The likeness alluded to must be judged of by the old standard, and not by our more critical modern notions of affinity. Although that shell is present in the Linnean collection, where it alone truly answers to the description (and our author has asserted his possession of it), so imperfect was the definition in the 'Systema' that it is scarcely expedient that the name *nitidula* should take precedence.

### ***Buccinum lævigatum.***

I can find no shell in the Linnean collection, which, upon the whole, so well answers to the description of this species as the *Columbella* (Payraud. Moll. Corse, pl. 8, f. 1, 2, 3) already recognised by Lamarek for the *lævigatum* of Linnæus, but erroneously left by him in the genus *Buccinum*. The identification, however, must be regarded rather as probable than as absolute, since the cited figure of Gualtier, although, perhaps, as much like the shell in question as any drawing at that period extant, was assuredly not designed for it. So rude, indeed, is the engraving, that it is impossible to divine what species of *Columbella* it was intended to represent: it bears some slight resemblance to *C. nitidula*, and certainly was not the species described by our author, since, in place of being lineated with brown on a pale surface, it is declared in the accompanying text to be minutely dotted with white on a reddish ground.

It is worth while to remark the peculiar use of "*striata*" for "*lineata*," since, from the context, no doubt can exist as to the unusual meaning of that term. "*Parva*" has been added in the

copy of the 'Systema' that belonged to the younger Linné, who has, likewise, inserted "tota" before "lævi."

### **Buccinum maculatum.**

The term "indivisis" has been modified, in the revised copy, by the insertion of the prefix "sub." Two very distinct species, the *Terebra oculata* (Rumph. pl. 30, f. D) and the *T. subulata* (Gualt. pl. 56, B.—Rumph. pl. 30, f. B), were appended as varieties in the 'Museum Ulricæ,' by the expressions "Variat colore luteo characteribus albis; Colore fulvo, characteribus nigricantibus." The former is excluded as typical by the "flavescens maculis purpurascens" of the 'Systema;' the latter was subsequently constituted a species by Linnæus himself. Omitting, then, from the too comprehensive reference to Rumphius all his figures except A (his "Strombus 3" suits not the colouring; his "Strombus 2" is equal to B), we shall have, in the twelfth edition of the 'Systema,' a purified synonymy, and a pictorially defined species that can only be identified with the *Terebra maculata* of modern writers, specimens of which (Martini, Conch. Cab. f. 1440) still repose in the Linnean cabinet.

### **Buccinum subulatum.**

The *Terebra subulata* of authors (Sow. Thes. Conch. vol. i. pl. 41, f. 16) is marked for this shell in the Linnean collection, and "List. 842" has been added to the synonymy in the revised copy. The reference to Seba must be omitted; f. 11 being *T. oculata* and f. 16 *T. muscaria*: the former suits not the stated colouring; the latter is opposed to the "indivisa, integerrima" of the definition.

### **Buccinum crenulatum.**

The quoted shell figured in Seba's bulky folio does not bear any resemblance to the described features of the present species;

the erroneous reference probably resulted from the hastiness of the glance bestowed upon the numerals by Linnæus, since the figure adjacent to and next after 34 represents, indeed, *Terebra crenulata*, but is marked 9, not 35. The other delineations referred to (the only ones quoted in the earlier edition, and in the 'Museum Ulricæ'), although somewhat rude, exhibit a *Terebra* whose characters coincide with those ascribed to the shell, and hence pictorially define the species. The *T. crenulata* of authors (List. Hist. Conch. pl. 846, f. 75) is still preserved in the Linnean collection, and alone agrees with the definition of this shell.

### **Buccinum hecticum.**

Unfortunately Linnæus did not himself possess this most puzzling shell, which has generally baffled the endeavours of naturalists to identify it: hence Chemnitz was deceived, when he flattered himself that he had determined it, by the aid of the Linnean collection, which was at that time in the possession of Sir J. Smith; the shell delineated by him agrees with the supposed pale variety of *Ter. dimidiata* figured in Hind's Monograph of the genus, but bears not the least likeness to the engravings cited in illustration of *B. hecticum*. Linnæus, with his habitual carelessness in referring to Seba in the twelfth edition, has transposed the references of this and the preceding species; figure 21, here cited, being *T. crenulata*; figure 35, there quoted, being similar to the engraving of Gualtier. Both these delineations represent the *T. cærulescens* of Lamarck (as exhibited by Kiener and Hinds), and that shell (which forms part of the Linnean collection) is not actually opposed to the description in the tenth edition of the 'Systema,' where the obnoxious term "bifidis" was not inserted. Well might that admirable conchologist Deshayes ask why it should not be that shell, in his note to *cærulescens* in the 'Animaux sans Vertèbres.' An enquiry conducted independently of him leads to the same conclusion; but, as to any change of name, that must be left to the judgment of my readers.



### **Buccinum vittatum.**

As the figure of Klein represents a shell whose characters are in harmony with those ascribed to the *Buccinum vittatum*, the species, consequently, was sufficiently defined for identification. That *Bullia* (*Terebra vittata*, Sow. Conch. Man. f. 427) is still preserved in the Linnean cabinet, and exclusively suits the figure and description. In his manuscripts, Linnæus has also referred us to Petiver's 'Gazophylacium,' pl. 98, f. 15, which rude drawing was either designed for *B. vittata* or for its closely allied congener *B. livida*.

### **Buccinum strigilatum.**

Having perceived that he had inadvertently cited the figure of Bonanni both for this and the succeeding species, the author of the 'Systema' has properly erased it, in his own copy, from the synonymy of the former, and has enlarged his published description by the following passage: "Margo anfractuum punctis fuscis:" "anfractus cineti ordine punctorum purpureorum" has been, likewise, written in the copy that belonged to his son. These remarks suffice, also, to exclude the synonym of Rumphius, whose figure has been generally quoted for *T. myurus*: the other two (Gualtier and Argenville) exhibit *Terebræ*, that answer, indeed, to the inadequate description in the tenth edition of the 'Systema' (where "bifidis" is omitted), but not to that in the twelfth. Gualtier's figure represents the well-known *Terebra strigilata* of authors (Kiener, Coq. Viv. Ter. pl. 9, f. 18); Argenville's drawing delineates a narrower form, which has been termed *concinna* by Deshayes, and it is so very closely allied that its essential differences may, perchance, be questioned. That shell forms part of the Linnean collection, and, if one might admit the manuscript substitution of "simplicibus," which Linnæus has made in his own copy of the 'Systema,' for the published "bifidis," would alone suit (since the typical *strigilata* of authors is not present) the

altered description. The specimens, however, are of less authority, inasmuch as they were not those originally described, for *strigilatum* is not recorded as being in his cabinet at the date of the publication of the tenth edition of the 'Systema.' If the words of the 'Museum Ulricæ,' "linea interstitiali obscura," must be translated as "with a faint interstitial line," they repudiate the synonymy, and the definition becomes utterly insufficient: perhaps, however, they may be understood as "the usual interstitial line obsolete." If so indefinite a species as the *B. strigilatum* of Linnæus should be preserved (and had it not been generally accepted I should pronounce against it), it is due to Born, whose figure and description exhibit a recognisable shell; hence, in reference to it, it will be desirable to add "as amended by Born."

### **Buccinum duplicatum.**

An additional synonym "List. 837, f. 64" appears in the revised copy of the 'Systema,' which figure, as well as the previous references, are constantly quoted for the *Terebra duplicata* of modern writers (Kiener; Hinds). That shell (Kiener, Coq. Viv. Terebra, pl. 12, f. 26) is still preserved in the Linnean collection, where I find no other that equally suits the descriptions and the cited delineations. Gualtier's figure is very unsatisfactory, yet cannot be referred with greater certainty to any other known shell. The details of the 'Museum Ulricæ' are applicable to the species of the 'Systema,' a circumstance which is not of invariable occurrence.

I agree with Deshayes in regarding the *T. Lamarckii*, included as a variety by Hinds, as a perfectly distinct species. The colouring ascribed to his *T. duplicata* by Lamarck is not present in the examples that belonged to Linnæus.

### **Buccinum lanceatum.**

The *Terebra lanceata* of authors (Sow. Thes. vol. i. pl. 43, f. 52) is preserved in the Linnean cabinet, and alone of its con-

tents agrees with the definition of this shell. Argenville's figure, though rude, is characteristic; that of Rumphius is narrower than usual, yet, whether intended or not for it, conveys the general idea of its features. "Simplicibus" has been substituted for "integris" in the revised copy, and "Anfractus lineis ferrugineis erectis" has been added in the manuscript of the younger Linné.

### **Buccinum dimidiatum.**

Both in his synonymy and in his collection our author has confused together the *Terebra dimidiata* and *T. muscaria* of Hinds's Monograph. Both agree alike with the utterly insufficient description, but as four of the five quoted delineations apparently represent varieties of *muscaria*, whilst a very uncharacteristic drawing of a young shell (Seba, pl. 56, f. 19) is the sole representative of *dimidiata*, I do not think that naturalists have acted wisely in selecting that species as the typical form, more especially as figure 15 of the same plate in Seba, Gualtier, pl. 57, f. M, &c., were at hand for illustrative purposes. In confirmation, however, of this admixture "List. 843" has been added in our author's own copy of his 'Systema.' In accepting the traditional *dimidiata* we should at least qualify our reference to the Linnean *Buccinum* by a "partly."

### **Buccinum murinum.**

No author appears to have recognised this species; for the description is too brief, and the cited engraving does not exhibit the indicated characters. The drawing of Gualtier represents a livid and cancellated *Terebra*-like shell, which does not precisely resemble any member of that genus hitherto described; indeed, the omission in the figure of the characteristic anterior emargination renders it uncertain whether it should be positively referred to *Terebra* at all. Whatsoever it may have been intended for, it is assuredly not the *Buccinum murinum* of the description; for the whorls are neither sub-angulated above nor encircled with three prickly striæ: at

most, then, it can only be regarded as an approximation to the general aspect. Linnæus had proposed to remove the species to the genus *Strombus*; so that, coupling this circumstance with the recorded peculiarities, it is probable that it belonged to *Cerithium*, and to the short-tailed section (*Potamis*), or it would have been placed by him in *Murex* (as he designed with *St. tubercularis*) along with the other true *Cerithia*. Now of all the specimens in the Linnean collection (where the presence of *murinum* is declared in the original list that accompanied the tenth edition), the *Cer. granulatum* (as in Kiener) alone bears any likeness to the declared characteristics, without being utterly unlike the engraving of Gualtier; the example (Born, Test. pl. 11, f. 16), however, being decorticated, does not answer to the colouring, and the presence of the species is not recorded in the final list, so that, although the identity of the two is not so improbable, it cannot be absolutely demonstrated.

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## STROMBUS.

The following addition to his generic characters was proposed by Linnæus for his revised edition of the 'Systema:' "Labium postice ad latus sinu excavata exceptis 502, 510, 514."

### *Strombus fusus.*

When this species was first constituted, our author, as we learn from the catalogue of his collection, did not himself possess a specimen of it. It was pictorially defined in the tenth edition of the 'Systema,' by no less than three references

to figures of the short-tailed form of the *Rostellaria rectirostris*, a shell whose characters, being in harmony with the description, must consequently reassume, as Deshayes has remarked, the appellation originally bestowed upon it by Linnæus. The more ample details in the 'Museum Ulricæ' exactly apply to the only drawing there cited as illustrative, to wit, Argenville's representation of the above-named *Rostellaria*. Should the long-tailed Chinese variety be hereafter reputed a distinct species, it is worth remembering that the "rostrum testæ dimidio brevius" (M. U.) would not so fittingly apply to that form as to the other. The shortness, however, was, perhaps, after all, only the result of accident. In the twelfth edition of the 'Systema,' Linnæus unfortunately quoted, in addition to that figure in Seba which represented the shell he had previously indicated, two others in the same work, both usually referred to the *R. curvirostris*, though one of them looks more like an immature *R. curta*. From this circumstance arose the common acceptance of the first-named shell as the representative of the Linnean species. Dillwyn perceived the error, for he has solely referred to the 'Museum Ulricæ' and the tenth edition of the 'Systema,' in the synonymy of his *S. unicornis* (*R. rectirostris* of Lamarck), but, from deference to the opinion of others, has unwisely continued the name *fusus* to the *curvirostris*.

In the 'Mantissa' our author has bestowed the name of *Strombus clavus* upon an immature example of *R. rectirostris*. Having possibly perceived its identity with his previously constituted species, Linnæus perhaps intended to conceal the double appellation, by transferring the name *fusus* from his earlier species to the *R. curvirostris*, which latter he has thus described at large in his revised copy, and eventually marked for the species in his own collection:—"Testa fusiformi, subulata, pallidè testacea, læviuscula; anfractus breves, præter apicem anfractus 5 seu 6, longitudinaliter, seu ad suturam, crenati. Faux ovato-lanceolata, alba glaberrima, utrinque ex-currens in canalem; canalis anterior lanceolatus, adnatus, ex-currens tertium anfractum; posterior subulatus, longitudine vix aperturæ, sinu oblongo distinctus a labis exteriori, margine nigro: labium exterius gibboso-marginatum, postice dentibus 5 seu 6 obtusis glabris; posterioribus majoribus. Labium

interius reflexum gibbum, dente gibboso in fauce ad canalis anterioris initium."

Much of the present confusion has not improbably arisen from a cursory verification of specimens by the aid of our author's cabinet; the ideas derived thence, indeed, may have been the source of many traditional identifications.

### ***Strombus pes-pelecani.***

The *Aporrhais pes-pelecani* (Crouch, Introd. Lam. Conch. pl. 18, f. 3) is preserved in the box marked for this species in the Linnean cabinet, and alone agrees with the definition of the shell. The synonymy, upon the whole, is good; the 866 of Lister, however, should have been 865 (which numerals appear in the revised copy, where "Pet. Gaz. 79, f. 6" has been accurately cited), and Bonanni, f. 86, which was doubtlessly taken for an immature specimen, does not correctly represent one: in the Vienna edition 87 was misprinted 97.

### ***Strombus chiragra.***

Until lately two very distinct shells have been confounded under this appellation, the *Pterocera chiragra* and the *Pt. rugosa* of Sowerby and Reeve. The excellent description in the 'Museum Ulricæ' clearly indicated the former, and that shell (Sow. Thes. Conch. vol. i. Pter. f. 12) is marked for the species in the collection of Linnæus. His synonymy is far from correct, and as it would be somewhat bold to pronounce from rude uncoloured dorsal views, in very many cases taken from immature examples, between two species so allied in form as those specified, I shall not attempt to fully revise it, but merely mention a few of the more striking inaccuracies. The reference to Bonanni should have been 314, 315, for 312 was clearly designed for either *P. scorpio* or *P. pseudoscorpio* (it has been quoted for the latter by Lamarck); in Barrelier there is no f. I., figures 8 and 9 were probably intended. Gualtier, pl. 36, f. B is much more like *P. lambis*. The true *Pterocera chiragra* was well depicted in Seba, pl. 82, the second and third figures

on both the second and third horizontal rows, but, as no numerals were attached to the drawing, Linnæus has altogether avoided citing that plate.

### **Strombus scorpius.**

Both the *Pterocera scorpio* and *Pt. pseudoscorpio* are marked for this shell in the Linnean cabinet, but as the name can only be retained for one of them (Reeve has suggested that the latter may prove only a local variety of the former), it is desirable to follow tradition, especially as both Rumphius and Argenville (to which reference Linnæus has added "bona" in his own copy) decidedly represent it, whilst the engraving of Gualtier, even if designed for *pseudoscorpio*, was taken from an uncharacteristic young example. The locality, moreover, suits the former (Sow. Thes. Conch. vol. i. Pter. f. 1). The description in the 'Museum Ulricæ' is very ample.

### **Strombus lambis.**

The *Pterocera lambis* (Sow. Thes. Conch. vol. i. Pter. f. 5) of authors is marked for this shell in the Linnean collection. The synonymy upon the whole is good: the reference to Bonanni, however, must be expelled, it would have been more appropriate for *chiragra*. Lister, plate 866, figure 21, is referred to in the revised copy, and "bona" appended to the reference (misprinted F in the Vienna edition) to Argenville. The account of the claws in the 'Museum Ulricæ' reminds one more of *P. bryonia* than of ordinary specimens of *lambis*.

### **Strombus millepeda.**

The *Pterocera millepeda* (Sow. Thes. Conch. vol. i. Pter. f. 3) of authors is marked for this shell in the Linnean cabinet, and agrees with its descriptions and the cited delineations of Rumphius, Bonanni, and Lister, plate 869 (copied from the Italian publication). Argenville, too, represents an immature example,

which has been usually referred to this species; but Lister, pl. 868, must be omitted from the synonymy, as the allied *Pter. elongata* is there depicted.

### ***Strombus lentiginosus.***

The *Strombus lentiginosus* of authors is marked (Sowerby, Thes. Conch. vol. i. pl. 8, f. 79) for this species in the Linnean cabinet, and a figure of it in Lister (pl. 861) has been added to the synonymy in the revised copy of the 'Systema,' where "faux lævis" is likewise written. The references have been generally accepted as correct, except that to Barrelier, which should have been 1327, f. 6; for 1327, f. 5 is like *S. bitubercularis* (as figured in Reeve's 'Iconica,' and 1326, f. 4 is decidedly the *S. fasciatus* (*polyfasciatus* of Chemnitz) of the same work.

### ***Strombus gallus.***

The *Strombus gallus* of authors is marked (Sowerby, Thes. Conch. vol. i. pl. 10, f. 111) for this species in the Linnean cabinet, and agrees with its description in both the 'Systema' and the 'Museum Ulricæ.' In the revised copy of the former "bene" has been added to the reference to Bonanni, and "List. 873, 874" (the 873 erroneously) appended to the synonymy. From the characteristic representations of Seba, Gualtier and Bonanni (that of Rumphius is less certain, though generally considered meant for a broken or immature example of the same shell), naturalists easily distinguished this well-known species.

### ***Strombus auris=Diana.***

Two closely-allied, yet easily distinguishable species, the *Strombus guttatus* of Reeve (Conch. Icon. Strom. f. 33) and the *Str. Lamarekii* of Sowerby (Thes. Conch. vol. i. pl. 9, f. 98, 99) were confused in his synonymy by Linnæus, equally agree



with the 'Systema,' and are marked for the same species in his cabinet. As the Linnean name can only be retained by one of them, it becomes expedient to ascertain to which of the two that appellation should preferentially be awarded. Sowerby advocates the claims of the former; Reeve and Deshayes of the latter. The language of the 'Museum Ulricæ,' upon the whole, favours *guttatus*; for although "transversim striata" is more characteristic of the rougher *Lamarckii*, yet both have transverse (spiral) sculpture, whilst "fauce glabra" and "exiens in acumen subcarinatum longitudine spiræ" can only conjointly be affirmed of its rival. The synonyms in the tenth edition of the 'Systema' stand thus: Argenville and Gualtier represent *guttatus*; Rumphius and perhaps, too, Klein (copied from Bonanni, f. 302), *Lamarckii*. In the twelfth edition of the same work, Seba in plate 61 exhibits the former, in plate 62 the latter. In the 'Museum,' Rumphius, alone of the three who are cited, has delineated *Lamarckii*. On these grounds, and because the name was avowedly taken from Argenville (he calls it "Oreille d'Ane"! a slight difference), and that Sowerby was the earlier in separating the previously confused species, it seems desirable to adopt his views.

### ***Strombus pugilis.***

The *Strombus pugilis* of authors is marked (Sowerby, Thes. Conch. vol. i. pl. 8, f. 74) for this species in the Linnean cabinet. The cited figures of Bonanni, Gualtier and Argenville represent the species; that of Klein (copied from Bonanni, f. 307) was apparently designed for the *S. bituberculatus* of Lamarck, which suits not the "testa crocea" of the description. Lister, whose specimen is still preserved, has delineated a monstrosity that has erroneously been made a species of by Leach in the 'Zoological Miscellany' (*S. Sloanii*, Z. M. vol. i. pl. 22); the reference to his figure has been erased in the revised copy of the 'Systema.' The details of the 'Museum Ulricæ,' and the expurgated synonymy of that work, easily enabled naturalists to identify so brilliantly a coloured shell.

### ***Strombus marginatus.***

This shell is not mentioned by Linnæus as forming part of his collection. The very peculiar feature “dorso marginato,” which, in conjunction with the few other specified characteristics, is scarcely to be found in any other *Strombus*, induced Schröter to fix upon a shell (Sow. Thes. Conch. vol. i. Strom. f. 17) that so excellently agrees with the brief description that his selection has met with universal assent.

### ***Strombus Luhuanus.***

The *Strombus Luhuanus* of authors is marked (Sowerby, Thes. Conch. vol. i. pl. 7, f. 54) for this species in the Linnean collection; and two representations of it “Pet. Gaz. 98, f. 10,” “List. 851” have been correctly added to the synonymy in the revised copy of the ‘Systema.’ Argenville’s drawing represents *S. gibberulus*; the reference to his work must consequently be suppressed: the other figures referred to were designed for *Luhuanus*.

### ***Strombus gibberulus.***

The *Strombus gibberulus* of authors is marked (Sowerby, Thes. Conch. vol. i. pl. 6, f. 19) for this species in the Linnean cabinet, and “Faux atropurpurea” added in the revised copy of the ‘Systema.’ Naturalists easily identified this abundant shell from the peculiar distorted look that characterises it, and from its generally accepted synonymy. The whorls of the spire in unpolished examples are not smooth, as stated in the ‘Museum Ulricæ,’ but are spirally striated.

## **Strombus oniscus.**

M. Deshayes has ably explained that two species have hitherto been confounded under this appellation, and has given an ample description of the one which he has separated as the *Oniscia Lamarckii*. Since I know of no similar exposition of the distinctive features of the first-known member of that genus, nor any very characteristic figure of it, I have thought it desirable to delineate and describe it in the present work. It appears to have been termed *Voluta verruculata* by Karsten in the 'Museum Leskeanum' (vol. i. p. 226). *O. Oniscus*, Lin. (pl. 5, f. 3), shell elongated-ovate, solid when adult, white, marbled with wavy brown (more frequently linear) longitudinal spots and markings, with fine revolving raised wrinkles, and spiral rows of tubercles, of which there are three series upon the body-whorl, the first of which is double, the other two are narrower than their intervals; this upper series, the surface above which is plano-concave, is continued so as to coronate, as it were, the penult volution. Spire occupying about one-seventh of the entire length; apex very prominent and papillary. Aperture white; outer lip very thick, edged with coarse teeth like sulci; inner lip expanded, not coloured, roughened by very numerous pimple-like dots. Tail very short, rather recurved.

## **Strombus Lucifer.**

As M. Deshayes has surmised, this is nothing more than a form of *gigas*. The young specimens, which are severally marked in the Linnean cabinet for this and the succeeding species, are so alike that one feels surprised at their ever having been held distinct. The individual which represents *Lucifer* in the collection very closely resembles plate 90, figure 879 of the third volume of Martini's 'Conchilien Cabinet.' The synonymy includes the young of another *Strombus* likewise, but not a single representation of an adult shell.

## ***Strombus gigas.***

A very fine adult example of the *Strombus gigas* of authors (Sow. Thes. Conch. vol. i. pl. 10, f. 117), too large to be contained in the cabinet, where the appropriate numerals are inscribed on a young specimen (Martini, Conch. Cab. vol. iii. pl. 90, f. 881), is marked for this species in the Linnean collection. In the revised copy of the 'Systema' 863 has been substituted for the previous reference to Lister; and in the copy that belonged to the younger Linné the term "vividissimus" is followed by "carneus." The published synonymy is very incorrect: Bonanni, f. 307, was designed for *S. bituberculatus*; the cited drawings of Lister represent *S. bubonius*, *S. lentiginosus* and *Pterocera truncata*; of Columna, *S. fasciatus* (perhaps, however, 4 was meant, a much nearer approach, being *S. Goliah*). Rondelet and his copyist Gesner have roughly delineated a large broken immature *Strombus*, which has been generally supposed intended for the species under consideration. Had the preceding been the original references, it would have proved difficult for naturalists to have rightly determined, except, perchance, from the suggestive name, the shell actually intended by Linnæus; fortunately, however, Gualtier's engraving of an adult *gigas*, and Bonanni's figure (321) of an immature one, were alone quoted in the earlier (tenth) edition of the 'Systema.'

## ***Strombus latissimus.***

This long-recognised species formed no part of the original collection of Linnæus; a young example of somewhat doubtful authenticity, is, however, present in his cabinet. The shell was clearly defined by the harmony of the cited engravings with the specified characteristics. Seba's figure is an excellent representation of the *Strombus latissimus* of authors (Sowerby, Thes. Conch. vol. i. pl. 10, f. 112). The description in the 'Museum Ulricæ' accords with that of the 'Systema.'

### ***Strombus epidromis.***

The *Strombus epidromis* of authors (Reeve, Conch. Icon. Stromb. pl. 19, f. 54) is marked for this species in the Linnean cabinet, and a figure of it in Lister (853) has been added to the synonymy in the revised copy of the 'Systema.' The references to Seba and Rumphius are correct; but Barrelier has delineated *S. gibberulus* at 1327 (misprinted 1727), f. 2, a shell whose lip suits not the "labro rotundato" of the diagnosis.

Judging from the expressions "Color testaceus, fasciis linearibus albis testaceo articulatis," and "utroque labio substriato," the *S. epidromis* of the 'Museum Ulricæ' was not identical.

### ***Strombus Canarium.***

The *Strombus Canarium* of authors (Sowerby, Thes. Conch. vol. i. pl. 8, f. 69, 70) is marked for this species in the Linnean cabinet, and a figure of it in Lister ("t. 853, f. 9") has been added to the references in the revised copy of the 'Systema.' The synonymy is mostly correct, but figures 24, 25 of the cited plate of Seba, and the 1. of the quoted engraving of Gualtier, represent the very closely allied congener *S. Isabella*. Linnæus had proposed to change "pinguis" to "saginata" and to append "gibba" as a characteristic. The description in the 'Museum Ulricæ' duly harmonises with the features of the shell.

### ***Strombus vittatus.***

The *Strombus vittatus* of authors is marked (Sow. Thes. Conch. vol. i. pl. 6, f. 29) for this shell in the Linnean cabinet. From the harmony of the cited delineations, naturalists recognised the species at an early period. In his revised copy

of the 'Systema' Linnæus has erased the passage commencing with "Confer;" he had previously referred the engravings there mentioned to his *S. succinctus*.

### ***Strombus succinctus.***

The *Strombus succinctus* of authors is marked (Sow. Thes. Conch. vol. i. pl. 6, f. 20) for this species in the Linnean cabinet, and answers correctly to the description. The cited figures are rather unsatisfactory; although, with the exception of the longer-spired *Strombus* in Seba (plate 62, f. 20, which nevertheless presents its general aspect), they are usually admitted to be meant for this shell.

As some doubt has existed as to the name being *succinctus* or *accinctus*, it is worth while to mention that the former appellation has been adopted in the revised copy.

### ***Strombus spinosus.***

This species (Chemn. Conch. Cab. vol. xi. pl. 212, f. 3003) still remains in its marked receptacle in the Linnean cabinet, and proves, as was supposed, to be identical with the *Voluta spinosa* of Lamarek.

### ***Strombus fissurella.***

From the "Habitat in India Orientali" this species has naturally been sought for among recent shells, and an Indian *Strombus* (?) has been thus named in the Monograph of that genus by the younger Sowerby. Unfortunately, however, for the identification, that species, though closely allied, does not exhibit the features attributed to it in the 'Systema.' Both the figures referred to as illustrative were avowedly taken from fossils; Petiver, indeed, remarks also, that he had received a like shell (probably the *St. fissurella* of the 'Thesaurus') from the East Indies, but has delineated a Lymington example.

Argenville's drawing (it is the sixth in sequence of the second line, and forms one of the group marked 6, but is not the *Mitra* of his plate) represents a fossil *Rostellaria* from Courtagnon, and agrees better than the English figure (both, however, have been referred by Lamarck to the same shell) with the assigned characters. The *Rost. fissurella* of Lamarck's 'Animaux,' from its correspondence with the words of the 'Systema,' and with one, if not both, of the cited engravings, has been generally accepted as the representative of the Linnean species. Examples of it (Sowerby, Genera Shells, Rost. f. 4) are still preserved in the cabinet of our author, who has recorded his possession of a specimen, and, since they exclusively answer to the description, there is no reason to doubt their typical authority. Murray, the pupil of Linnæus, has delineated the same species for it. In the revised copy of the 'Systema,' the "excepto maximo" has been erased, and the stop removed from after, to before, the word "apertura."

### **Strombus urceus.**

One regrets to disturb a long-established identification, yet truth compels me to declare that the *S. urceus* of modern writers is not the true representative of the species thus named by our author. We shall not find among the synonyms a single characteristic drawing of that shell, an absence not to be accounted for by none such being then extant, since, besides having been delineated by Bonanni (pt. 3, f. 144), a writer peculiarly consulted by Linnæus, it has been engraved, likewise, in those very works wherein different figures were referred to as illustrative. On the contrary it is the *S. mutabilis* (Seba, Mus. vol. iii. pl. 60, f. 28, &c.), and the *S. plicatus* (Rump. pl. 37, f. T, &c.), the former of which is marked for this species in the Linnean cabinet, where the suppositious *urceus* is not present, to which our attention is directed by the references. Indeed, the remarkable colouring of the aperture of that shell would scarcely have been passed over in the description: assuredly the "dorso nodis 3 seu 4" can be more correctly affirmed of *mutabilis* than of either of the others. The expression "labro attenuato" having been considered equivalent to

“labri margine attenuato,” though possibly meant only to contrast the lip itself with the expanded and lobated form of that part in its congeners, has probably misled naturalists; the edge of the outer lip in the type, however (Sow. Thes. Conch. vol. i. pl. 7, f. 45, but not so distinctly banded), is actually attenuated.

### **Strombus Dentatus.**

Linnæus did not himself possess this species, which although too briefly characterised, cannot well be mistaken, since of no other *Strombus* than one can the lip be declared toothed and peculiarly short. That shell, indeed, the *S. tridentatus* of Lamarek (*S. dentatus*, Sow. Thes. Conch. vol. i. pl. 9, f. 86, 87) possesses all the required features, which, upon the whole, are so peculiar, that, had it not been for the idea that “labro attenuato” was equivalent to “labri margine attenuato,” its identity would probably have suggested itself to all naturalists. Lamarek erred doubly; he termed *plicatus* the very shell he had declared to be the *dentatus* of Linnæus; and selected, as the representative of the Linnean species, a *Strombus* that does not even exhibit the peculiar features from whence the specific appellation was derived.

### **Strombus tuberculatus.**

It was in the twelfth edition of the ‘Systema’ that the *S. tuberculatus* made its first appearance, but being briefly characterised, and unillustrated by any pictorial synonym, much uncertainty has accrued as to the shell intended. The *Cerithium* (for its generic position was not doubtful), supposed by Born to be identical, did not even fulfil the few requirements of the short diagnosis, the spiral elevations being horizontally compressed large black knobs, instead of horn-coloured (“punctis corneis”) smaller ones. Gmelin copied the words of the ‘Systema,’ but referred to Born’s plate, as well as the other engravings cited by that writer. I observed in the collection of Linnæus a shell, which answers so correctly (and



alone in the cabinet does so) to his language, that its typical authority can scarcely be doubted; but whether we should be justified in disturbing the modern name, since, without actual examination of the type itself, it was impossible to ascertain the species originally intended, is open to discussion. The type alluded to is apparently the *C. moniliferum* of Kiener (Coq. Viv. Cer. pl. 16, f. 3), but, as the members of that crowded genus are by no means clearly defined, I have both figured the specimen and described it at large. Its enamel-like glaze explains the puzzling expression “quasi calce obducta.”

M. TUBERCULATUS, *Linn.*—Shell of a shortened turreted shape, solid, whitish, armed with spiral rows of tubercular points, which, in perfectly fresh examples, are chiefly of a corneous, in rubbed ones of a chestnut hue; here and there is one of them perfectly white, and the basal rows are subarticulated with white and chestnut (or horn-colour). Two or three fine wrinkled striæ intervene between these series, of which there are three on the principal turns of the spire, and eight or nine on the body-whorl; which last is furnished with an obtuse and gibbous varix almost opposite to the thickened edge of the outer lip, and terminates anteriorly in a very oblique short yet decided tail. Volutions moderately convex, rapidly tapering to a tolerably acute apex; suture distinct. Aperture obliquely oval, filling rather more than a third of the total length, white: inner lip incurved. Length about an inch.

In the revised copy of the ‘Systema,’ the species has been transferred to the genus *Murex*.

### **Strombus palustris.**

This species, of which Linnæus has not signified his possession, was pictorially defined by the cited figures of Seba and Rumphius, both of which indicate the *Cerithium palustre* of authors (Kiener, Coq. Viv. Cerith. pl. 1), a shell whose features are not opposed to the brief description.

### **Strombus ater.**

The exclusively cited engraving of Rumphius, which represents a shell (the *Pirena terebralis* of Lamarck), whose features harmonise satisfactorily with the few characters mentioned in the too succinct diagnosis, pictorially defines this species in the tenth edition of the 'Systema,' where no mention is made of the 'Museum Ulricæ.' Whether the *S. ater* of that publication should also be referred to the same shell may be doubted; since "anfractus rotundati" (in its ordinary sense, at least) can scarcely be applied to the flat-surfaced volutions of that well-known *Pirena*, which must reassume its earlier specific appellation. It does not appear, from the two catalogues of his shells, that Linnæus ever possessed the species.

### **Strombus lividus.**

The somewhat meagre account of this shell in the 'Museum Ulricæ' does not suffice for any indisputable conclusion. The majority of authors have followed the supposed identification of it by Chemnitz; yet, perchance, have not remarked the doubts which he himself has expressed upon the subject. His own recognition was based upon the fact, that he had seen a specimen of a shell thus named in the magnificent collection of Spengler, a nobleman whose dictum at that period was obsequiously (and, such was his knowledge, not unreasonably) bowed to by the student of conchology. Perhaps it is owing to the bad condition of ordinary examples of *Pleurotoma auriculifera* (the modern name of the Chemnitzian shell referred to) that I have never yet beheld a specimen that harmonised sufficiently with the following passages: "Color lividus, maculis ferrugineis. Anfractus, in medio, serie simplici spinarum, conicarum rectarum, acutarum. Apertura basi non coarctata." Assuredly there are several known *Pleurotomæ* which answer equally well to the published details, so that, although the *S. lividus* of Linnæus may be cited (with a "probably" attached)

as a synonym of *auriculifera*, it seems hardly expedient to remove its very expressive name from the latter.

Neither the manuscripts nor the collection of Linnæus throw any further light upon the matter; he did not himself, indeed, possess an example, but described the species from one or more specimens in the 'Royal Museum.'

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## M U R E X .

### *Murex haustellum.*

A marked example (*Murex haustellum*, Sowerby, Genera Shells, Mur. f. 1) of this species, in the Linnean collection, confirms the established opinion, which is further corroborated by a manuscript reference to "List. 903." The synonymy is correct, yet Argenville's figure was unworthy of being quoted; it was termed "becasse" in the explanatory text, an epithet equivalent to, yet not actually, "*haustellum*," as cited in the 'Systema': the name was more directly derived from Rumphius.

### *Murex tribulus.*

Under this name our author included, not alone in the 'Museum Ulricæ,' but likewise in both editions of the 'Systema,' both the *Murex tenuispina* of Lamarek (Reeve's Conch. Icon. Mur. f. 85) and his *M. ternispina* (as figured by Sowerby, Conch. Ill. f. 110, and by Reeve). The latter species I cannot distinguish in the 'Animaux sans Vertèbres' from *crassispina*, and must trust therefore to the accuracy of the two writers just mentioned. In the 'Conchologia Iconica,' where both are defined, the *crassispina* may be easily distinguished from being devoid

of the intermediate set of differently-disposed short spines upon its tail, but this shell, which corresponds best to Lamarek's description, is not imaged forth in his synonyms, which appear, on the contrary, to represent the *ternispina* of our English conchologists, and were possibly only quoted in default of more correct delineations being known to him. I am thus prolix, because the shell confused by Linnæus with *tenuispina* is generally understood to be *crassispina*, which it certainly is of the Lamarekian synonymy, not so, if our English authors have rightly comprehended the species, of his description.

To *tenuispina* belong the Linnean references to Bonanni, Argenville, Olearius, Seba, pl. 78, f. 1, 2, 3, Rumphius, pl. 26, f. 3, and Gualtier, pl. 31, f. B: to *ternispina*, which is marked for *tribulus* in the Linnean cabinet (Sow. Conch. Illust. Mur. f. 110 exactly), Rumphius, pl. 26, f. G, Columna, pl. 60, f. 6, Petiver, pl. 101, f. 16 (added in the Linnean copy of the 'Systema'), and perchance, though less characteristically, Seba, pl. 78, f. 4, Lister, pl. 902, f. 22, and Gualtier, pl. 31, f. A. One almost hesitates to change the appellation of the latter, as suggested by Deshayes, to *tribulus* (a name proposed for both species by Rumphius), since the references to the more beautiful rival are less doubtful, and quite as numerous; one avoids, however, by so doing, the difficulty of pronouncing what species was the *ternispina* of Lamarek. The expressions "nobilior varietas spinis longissimis" (Syst.), "nobilitant hanc testam spinarum longitudo, &c." (M. U.), prove that both shells were alike included in, and both consequently alike entitled to, the name *tribulus*; and although, in the tenth edition, the more characteristic figures of *tenuispina* are distinguished by an asterisk, as the "nobilior varietas," we must not conclude that the other synonyms exhibit the more typical form. For in the works of Linnæus, and of many other naturalists of the older school, the word variety had not its modern signification of an object presenting some slight difference from the characters previously enumerated: the usual mode was to specify in the diagnosis the more striking characters common to every supposed individual of the species, and then separately attach the differential minutiae to each of the dissimilar forms, a proceeding which invested the whole of the varieties with equal rank.

## **Murex cornutus.**

Great carelessness is displayed in the synonymy of this species. The "Kirch. Mus." was clearly an error for "List. Conch.," which engraving (901, f. 21) exhibits the *Murex cornutus* of authors; Petiver represents the *M. brandaris*, for which it was also quoted by Linnæus; so, too, it seems to me, does Seba's figure 8. A similar neglect is apparent in the 'Museum Ulricæ,' where the 5 in the reference to Rumphius was misprinted S, and "Differt a sequente cui simillimus" induces the supposition that the *trunculus*! which follows it in that publication was intended, instead of *brandaris*, which it precedes in the 'Systema.' From the description in the 'Museum,' however, and the characteristic engravings of Gualtier, Lister and Seba, f. 7, naturalists have generally recognised and preserved its original specific and generic appellation (Reeve, Conch. Icon. vol. iii. Mur. pl. 18, f. 71). The cited engravings of Rumphius, Columna (the third figure by position only), Bonanni, and Adanson (as we learn from his description, rather than from his drawing), were all intended for the species; Seba's figure 8, although usually ascribed to it, is not characteristic.

## **Murex brandaris.**

The *Murex brandaris* of authors (Reeve, Conch. Icon. Mur. pl. 23, f. 96) is marked for this shell in the Linnean collection, and "List. 900" rightly quoted, as a synonym, in the revised copy of the 'Systema.' The references are correct, though the figures of Gualtier and Rumphius are not satisfactory.

## **Murex trunculus.**

The *Murex trunculus* of authors (Martini, Conch. Cab. pl. 109, f. 1019) is marked for this shell in the Linnean cabinet. The reference to Argenville was an error, and Linnæus, in his

revised copy, has written something opposite to it, which I cannot decipher. The rest of the synonymy is generally accepted as accurate, though the locality (the Red Sea) attributed by Bonanni to the specimen he has delineated (277) throws doubt upon its identity. Klein's engraving was copied from figure 274 of the same writer: one feels surprised that the representation of it in Ginanni's work (pl. 9) was not quoted in illustration.

### ***Murex ramosus.***

Nearly every *Murex* with three ramose varices and a short tail seems to have been originally regarded as a form of this supposed Protean shell; at least, the figures of all such as were then published have been cited as synonyms in both editions of the 'Systema,' and the Linnean diagnosis in its brevity would include them all. This accounts for the circumstance that both *M. adustus* and *M. pomum* are marked for this species in the Linnean cabinet, although the former alone finds a place in those indicated in the 'Museum Ulricæ.' One might have hoped that the details of the last-named work, by limiting the comprehensiveness which necessarily results from too succinct a description, would have guided us to a right conclusion as to what species, if any, should retain the appellation of *ramosus*. That hope, I fear, is fallacious. Four *Murices* are referred to in the synonymy of that work; *M. inflatus* (Rump. pl. 26, f. A.; Gualt. pl. 38), *M. axicornis* (Rump. pl. 26; Arg. pl. 19, E.), *M. adustus* (Arg. pl. 19, f. H.), and *M. calcitrapa* (Arg. pl. 19, f. C.). Irrespectively of this synonymy, it is manifest, likewise, that three most distinct species ("A. Angulis membranaceis planis.—B. Angulis brevissimis undulatis: colore albo, maculato luteo.—G. Angulis frondosis: colore rubicundo, testaceo, aut pallido.") were also included as varieties. The first of them (*pomum*?) was not represented by any of the cited figures; "brevissimis" of the second is scarcely applicable even to the varices of *inflatus*; the third might include all but *adustus*, which last, if we are to regard the variety A as the typical form, and that to which the description which follows

is solely applicable, is fairly ousted from the competition. If, however, that description is to be considered as appertaining strictly to the type, of which the forms *A*, *B* were erroneously held variations, then *inflatus* is excluded by “*nigra, oblonga*”; and “*sulcata striis transversis albis*”; “*apertura intus dentata*” is alike adverse to both *axicornis* and *adustus*. In that event *M. calcitrata* (of which a black variety is present in the Cumingian cabinet) would alone correspond to the entire description.

In addition to these several *Murices*, the figures of many other members of the same genus (*monodon, brevifrons, palma-rosæ, &c.*) have been referred to in the ‘Systema.’ It seems to me, then, that the specific name was erroneously bestowed by Linnæus upon a group collectively, and not upon any one shell exclusively; hence, the species not being adequately defined, the name should either be consigned to oblivion, or, if retained, should be applied to *inflatus* as the *ramosus* of Rumphius, and of Linnæus “in part.”

Two typographical errors occur in the twelfth edition (only) of the ‘Systema’; the reference to Klein should have been 82, not 8; to Regenfuss, t. 7, not t. 1.

### **Murex scorpio.**

Linnæus has not signified his possession of this strangely formed object. Naturalists have easily recognised it (*Murex scorpio*, Kiener, Coq. Viv. Mur. pl. 9, f. 9) by the very characteristic figures of Seba and the details of the ‘Museum Ulricæ,’ which clearly distinguish it from its allied congener *rota*. The synonymy is apparently correct.

### **Murex saxatilis.**

Not one of the many figures referred to as illustrative exhibits a species which precisely agrees with the “*quinque-fariam frondosa*” of the diagnosis; hence the *Murices* there delineated can, strictly speaking, be only regarded as approxi-

mations to the object intended. The details of the 'Museum Ulricæ' are very scanty, utterly insufficient, indeed, for the determination of any shell, without the addition of a partially correct synonymy. In this predicament, Lamarek has cut the Gordian knot, by selecting for his *Murex saxatilis*, the shell represented by Regenfuss, f. 26, and Rumphius, f. 2. The reason for this selection is not apparent, especially since he has referred four of the other figures (those of Argenville, Regenfuss, f. 6, and Seba, f. 5, 6) to his *endivia*, which is said to be occasionally armed with five varices only. Seba, f. 4, represents *Murex inflatus*, and Rumphius, f. C, was perhaps designed for *adustus*. As even in the shortest synonymy (that in the 'Museum,' where the varices are limited to four or five) no less than three species are referred to, none of which suit the description, no definite conclusion can be arrived at by the study of our author's publication. In short, the *M. saxatilis* was practically undefined, and, as Deshayes suggests, should be dropped as a Linnean species: otherwise the claims of *endivia* must be preferred to those of the larger shell; Mörch, indeed, in one of his critical catalogues, has pronounced it identical with the Linnean shell. Our author does not appear to have described the species from examples in his own cabinet, for the name is not included in the list of *Testacea* which were in his own possession.

### ***Murex erinaceus.***

The *Murex erinaceus* (Knorr, *Délices Yeux*, pt. 4, pl. 23, f. 3) of authors is marked for this species in the Linnean cabinet, and answers to the description, locality, and quoted illustration.

### ***Murex rana.***

The *Ranella albovaricosa* of Reeve (*Conch. Icon.* vol. ii. *Ran.* pl. 1, f. 2) is marked for this shell in the Linnean cabinet; as well as the *R. spinosa* of Lamarek (Kiener, &c.), which latter



was the "varietas—spinis aliquot elongatis e Tranquebar," figured by Seba (pl. 60, f. 19). The *R. crumena* of Lamarck has usually been considered the *M. rana* of Linnæus, and so little attention was paid to the minuter details by the older engravers, that it is scarcely possible to decide what shell the cited figures of Gualtier, Bonanni, Regenfuss, and perchance Rumphius (the latter seems more like *albovaricosa*), were designed for; Petiver's is also an uncertain figure: all, however, remind one strongly of the species they were quoted for, which also agrees with the description in the 'Museum Ulricæ.' Figures 15, 16 (and possibly 13, 17, 18) of Seba were certainly intended for *albovaricosa*; 14 and 20, as well as the R of Argenville's cited engraving must be expelled from the synonymy, since they represent *R. bufonia* (or some very close ally of it); so, too, must Argenville's P, which reminds one of the *R. granifera*, as exhibited by Kiener. Possibly these two last were the several representatives of the varieties *b* and *a* of the 'Museum Ulricæ.'

### **Murex gyrinus.**

A specimen (Knorr, *Délices Yeux*, pt. 6, pl. 25, f. 5, b) of the *Ranella ranina* of Lamarck, in the Linnean collection, is marked with numerals referring to the 'Systema'; but time has so nearly obliterated the cyphers that it would be presumptuous to declare them indicative of this species, were it not for the circumstance that no other shell in the cabinet (and our author possessed it) answers alike to the combined description and cited figures. Moreover, a delineation of the same shell in Petiver's 'Gazophylacium' (pl. 102, f. 14) is quoted by our author in his revised copy of the 'Systema.' The expression "edentula" is by no means appropriate, but is used, also, for the two succeeding species, which have also tubercles on the internal margin of the outer lip. It is somewhat strange, too, that Gualtier, pl. 49, fig. E. was not cited, since that engraving fairly exhibits the shell intended.

## *Murex lampas.*

Two very distinct forms, if not species, both of which were represented in the illustrations cited in the synonymy of this shell, have been indicated by naturalists under the single appellation of *Triton lampas*. The one (Gualt. pl. 50, f. D, and, perhaps, Rumphius, pl. 28, f. C) is large, light, white-mouthed, and embossed with comparatively small and numerous grains and tubercles; the other (Rumphius, pl. 28, f. D, and, perchance, Rondelet, ii. p. 81) is very much heavier for its size, much more coarsely sculptured, and with a scarlet aperture: it has been well delineated in Kiener's 'Coquilles Vivantes.' The stated locality ("Habitat in M. Mediterraneo"), the "apertura edentula," and the whole account of the species in the 'Museum Ulricæ,' more especially such expressions as "oblonga—*Mur. lotorio* affinis et similis," are by no means suitable to either of these forms; it is strange, moreover, that the drawings of them in Klein (pl. 3, f. 59), Argenville (pl. 12, f. D), and Bonanni (pt. 3, f. 103), have not been cited in the 'Systema,' and that the two varieties *B* and *G* were originally attached to *rana*. Had the solitary figure in Gualtier, cited in the 'Museum,' been a representation of the *T. lotorium*, it would have harmonised fairly with the description, but being the same that is quoted in the 'Systema,' and displaying a *Triton* whose features do not correspond with those specified, the definition in that publication proves insufficient to ensure a positive identification. In this predicament the majority of conchologists have arbitrarily selected the red-mouthed form (*Lampas rubeta*, Mörch) as typical, but, if either merits to be considered the *Murex lampas* of Linnæus, the one delineated by Gualtier, and cited as typical, not that only included as a variety, should have the preference. Assuredly the shell described in the 'Museum' cannot be referred to either. The collection throws no light upon the species, since Linnæus has not recorded his possession of an example.

## **Murex olearium.**

As might have been surmised from the characteristic figures of Gualtier and Rumphius (the reference to the latter was misprinted H in the twelfth edition of the 'Systema,' but corrected by Linnæus to I in his revised copy), and the Mediterranean habitat, the *Ranella gigantea* of Lamarck is marked for this species (Encycl. Méth. Vers, pl. 413, f. 1) in the Linnean collection. This confirms the conclusion arrived at by that admirable conchologist Deshayes, whose critical annotations on the Linnean species of shells merit the highest praise. Linnæus has written "illinc tuberculata," instead of "edentula," in his own copy; his originally described specimen was probably either immature or imperfect at the mouth. The reference to Columna, and the additional synonyms of the twelfth edition, to wit, those of Seba (51 was a misprint for 57), Adanson, Bonanni, and Lister (figs. 31, 32 belong severally to t. 936, 937, and were copied from the last-named author) are wholly erroneous. The last, indeed, has been erased (and thus virtually, too, the synonym of Bonanni) in the revised copy, where "t. 935, f. 30" has more correctly been substituted for it.

## **Murex femorale.**

The *Triton femorale* (Knorr, Délic. Yeux, pt. 4, pl. 16, f. 1) is marked for this shell in the Linnean collection, and agrees with the published description, and with many of the synonyms (Grew, Lister, Bonanni, Gualtier and Seba are usually considered its acknowledged representations). Having discovered that he had confused two distinct species, the great Swedish naturalist has written "2" before the name, and excluded the references to Regenfuss, Rumphius and Argenville, all of which have been generally quoted for *T. lotorium*, and has indicated by a "bene" appended to the synonym of Bonanni, that his engraving well exhibited the object for which he proposed to retain the name. *T. femorale* is figured by Grew, but the

engraving meant was 10, not 11 (as printed), and the "7, 8" is not to be understood as attached to the figures, which are only the seventh and eighth by position upon the plate.

### ***Murex cutaceus.***

The *Triton cutaceus* of authors (Sowerby, Genera Shells, Trit. f. 2) is marked for this shell in the Linnean collection, and the additional synonym of "List. t. 942" has been accurately cited in the revised copy. The published reference to Seba was very unsatisfactory, the adjacent figures 71, 73 being far more characteristic than 72.

### ***Murex lotorium.***

This shell (which is not mentioned as being in the possession of Linnæus) first appeared in the tenth edition of the 'Systema' with the same utterly insufficient description that was reproduced in the twelfth one, and with a single queried reference to a *Triton* delineated by Argenville, which I suppose to be *aquatilis* or *pileare*. Hence the species, as then produced, must be rejected as irrecongnisable. The *M. lotorium* was next published in the 'Museum Ulricæ,' where it was described as a large red *Triton* with "subter costas singulas tuberculorum series 5 longitudinales." Now, in whatever sense we may understand this passage, it suits not the *T. lotorium* of authors; if, however, the "subter" should have been a mere misprint for "inter"—and, as the "costas" here signify varices, it would be sheer nonsense to talk of tubercles beneath them: moreover, in the antithetical description of a shell (*lampas*) declared to be like it in the opposite page of the same publication, "nodi tres—inter costas" are specified—in that case the entire account would suit the *T. pyrum*, and, strange to relate, the account of *M. lampas* would apply fairly enough to the traditional *Tr. lotorium*, which has three, not five, knobs between each varix.

Had I been alone in this opinion I should scarcely have ventured to positively assert the identity of the Lamarckian

*T. pyrum* with the *M. lotorium* of Linnæus (as first intelligibly defined), but a recent perusal (long after these pages had been penned) of Mörch's critical sale-catalogue of Count Yoldi's collection proves that another has arrived at a similar conclusion by an independent path of inquiry.

In the last-published edition of the 'Systema,' a figure in Rumphius, generally considered meant for *Triton lotorium*, was doubtfully cited, hence the accepted though illogical conclusion of the identity of that shell with the Linnean species. We have reason to believe, indeed, that our author had eventually (subsequently, however, to his published definition in the 'Museum') resolved upon the selection of that *Triton* (Sowerby, Genera Shells, Trit. f. 1) as the type of his *Murex lotorium*, for, in his own copy of the 'Systema,' he has erased the note of interrogation to the Rumphian figure, and changed the M? in the reference to Argenville into B (a beautiful and characteristic engraving of the *Triton lotorium* of authors). Both of these synonyms (as well as Regenfuss' figure of it) had been originally and wrongly annexed to *femorale*, which it followed in the tenth edition; perhaps, then, there was some error in printing, for the lower portion of the synonymy of number 456 (ed. 10) would suit 457, whilst the reference attached to the latter bears far more likeness to 458; even the numeral "5" in the 'Museum' may have been a misprint for "3." This, however, is mere surmise.

### ***Murex pilcare.***

This species was pictorially defined in the tenth edition of the 'Systema,' since the quoted engraving of Gualtier (the only one referred to in that publication) was not opposed to the few characters mentioned in the brief description. Additional figures of the same species (Seba, vol. iii. pl. 57, f. 23, 24), and others of *T. succinctus* (Seba, vol. iii. pl. 57, f. 29, 31), were added in the twelfth edition. Notwithstanding, it appears that neither of the two delineated was intended, but, in accordance with the locality, *T. corrugatus*, a shell which equally (or even better) suits the description, but of which there was no delineation then extant. That species (Reeve, Conch. Icon.

vol. ii. Trit. f. 15) is marked for *pileare* in the Linnean cabinet; but, since it was impossible, without actual examination of the type, to have deduced this fact from a definition which was not merely inadequate but misleading, it is not expedient to create confusion by altering the established nomenclature. The figures were doubtlessly referred to as exhibiting the nearest accessible approximation to the features of the Mediterranean congener.

### ***Murex pyrum.***

As the species originally appeared it was unintelligible, owing to the variety of delineations referred to, as illustrative of it, in the tenth edition of the 'Systema.' *Triton clavator* (Regenf. f. 50), *T. pyrum* of authors (Gualt.), *T. sarcostoma* of Reeve (Arg.), &c., were exhibited in the cited engravings, and would about equally correspond with the briefly comprehensive description. Yet as all the figures except the first named bear a general resemblance to each other, one is not surprised that the majority of naturalists have accepted the most accurate of the drawings (Gualtier's) as a correct representation of the type. In this they have erred, since the limiting additions "Teste alba, &c. Cauda longitudine testæ" to the description in the twelfth edition of the 'Systema,' and the preferential retention of figure 50 of the two previously-quoted paintings of Regenfuss, render it impossible to accept this arbitrary identification. For, on the principle of rejecting as illustrative all such engravings as do not harmonise with the described features, that figure (Reg. f. 50) which represents the long-tailed white *Triton* can alone be retained, and hence the *T. clavator* (as exhibited by Reeve) must be regarded as the veritable representative of the Linnean *Murex*.

### ***Murex rubecula.***

The *Triton rubecula* (Reeve, Conch. Icon. vol. ii. Trit. f. 29) of authors is marked for this shell in the Linnean cabinet, and agrees with the synonymy and the descriptions in the 'Systema' and 'Museum Ulricæ.'

## **Murex scrobiculator.**

The *Triton scrobiculator* (Chemnitz, Conch. Cab. vol. x. pl. 163, f. 1556, 1557) of authors is marked for this shell in the Linnean collection. The species was pictorially defined in the tenth edition of the 'Systema,' by the single reference to Gualtier's engraving being in harmony with the brief description. Of the other synonyms, only appended in the twelfth edition, Adanson's is correctly cited (at least, it has been generally so quoted); Lister's was probably a misprint for 943, f. 39 (not 34, 39), which figure also has been attributed to *scrobiculator*; Seba's and Petiver's had been already referred by Linnæus to *Murex rana*, and are decidedly *Ranellæ*. The reference to the 'Gazophylacium,' indeed, has been erased in the revised copy of the 'Systema.'

## **Murex reticularis.**

No aid is afforded us by the Linnean cabinet towards the elucidation of this species, a brief description of which, accompanied by two apparently antagonistic synonyms, made its appearance in the tenth edition of the 'Systema.' Of these the cited figure of Gualtier represents the *Ranella tuberculata* of Broderip, that of Bonanni the *R. gigantea* of Lamarck. Both these shells harmonise fairly enough with the succinct diagnosis, but the "columella subedentula" is far more suited to the former. The latter, however, has been erroneously taken by Gmelin, Dillwyn, and certain other writers, for the true representative of *reticularis*, solely on account of Bonanni's very inaccurate figure of it. But since that *Ranella* has already been described in the 'Systema' as *Murex olearium*, little doubt can exist that Linnæus regarded this figure of Bonanni as either a magnified delineation or a larger form of the shell figured by Gualtier, which, except in size, it more nearly resembles than it does the Mediterranean shell we know it to be intended for; the longitudinal plicæ extend in the engraving over the entire body, the varices are drawn as uninterrupted, and the upper

part of the aperture as devoid of the internal sinus which is formed in *gigantea* by the cessation of the teeth. I consider, then, the *R. tuberculata* to be the original *M. reticulatus*, an opinion sanctioned by Murray, the pupil of Linnæus, who has figured that species for it in his 'Fundamenta Testaceologiæ.' The introduction, in the synonymy attached to the species in the twelfth edition, of a drawing of *Cancellaria (Phos) senticosa* was unimportant, since that shell does not at all answer the requirements of the diagnosis; it was possibly a typographical error, and has been corrected in the revised copy. An utterly different species is mentioned by the same name in the 'Museum Ulricæ,' where the recorded details do not agree with any of the three just spoken of. Judging from the expressions "labium interius longitudinale, membranaceum, patens, reticulatum" and "affinis sequenti" (*M. anus*), I more than suspect that the *Triton mulus* was there intended. This conclusion, I perceive, has been independently arrived at by Mörch, who, without comment, has simply published them as synonymous in one of his suggestive catalogues (Kierulf).

### **Murex anus.**

The *Triton anus* (Sow. Genera Shells, Trit. f. 2) of authors is marked for this shell in the Linnean cabinet. From the length and accuracy of the synonymy, and the peculiarity of aspect depicted by the description, the species has been readily identified by naturalists.

### **Murex ricinus.**

The *Murex ricinus* was pictorially defined in the tenth edition of the 'Systema,' where the brief diagnosis was in harmony with the excellent figure of Gualtier, and the tolerably characteristic one of Rumphius. They both represent the *Ricinula arachnoides*, of which an example (Encycl. Méth. Vers, pl. 395, f. 3) still remains in the Linnean cabinet, with the significant numerals inscribed upon it. In his revised copy our author has inserted "utrinque" before "dentata."



The "faux violacea" of the twelfth edition hints that the *R. horrida* was included, but Seba's figures, though far from characteristic delineations of the type, do not represent that species. The "faux patula" of the 'Museum Ulricæ' is not very applicable to the adult state of either *Ricinula*.

### **Murex nodus.**

From the very insufficient definition of this species, several shells have been suggested as the representatives of it. The *Murex nodus* of Born is clearly not alike in features to that described by Linnæus; excluding such of his references as are inconsistent with his language, the ideal would be some such *Purpura* as the *hippocastanum* of Lamarck's 'Animaux.' Schröter and Gmelin have cited, with hesitation, a figure of the *Purpura hystrix* of authors as illustrative: in most respects that shell (which is not to be found in the Linnean collection, where *nodus* is declared to be present) corresponds fairly enough with the ascribed characters, but the aperture does not suit the expression "incarnata," which (as, for instance, in *Strombus pugilis*) has with our author the signification of orange-flesh colour. The synonymy of *nodus* in Dillwyn unfortunately includes so many *Purpuræ* (*bufo*, *callosa*, *pica*, &c.), that it is not clear which of them he really designed as typical. Modern writers, for the most part, make no mention of the species; Mörch (Cat. Yoldi), however, believes he has detected it in the *Purpura deltoidea* of Lamarck. Although not a bad guess, the accordance is not so perfect as to produce a perfect conviction of the identity, and without positive certainty a change in nomenclature is not desirable. "Flava — spinis multiplici serie flavis aut nigris" and "Faux incarnata" scarcely suit a white-mouthed shell which is banded with black between the few rows of its pale spinous knobs. The truth is that neither the 'Systema' nor the 'Museum' afford any adequate details by which we can determine what *Purpura* was actually intended. Under such circumstances even the discovery of the original type would give no just priority to the epithet *nodus*.

The numerals 541, indicative of this species, are legible upon a variety of *Purpura hæmastoma* (Kiener, Purp. f. 78, b) in the

Linnean collection. So imperfectly, however, does the specimen harmonise with the prescribed characteristics that I entertain but little doubt that this marking was an error; at all events the shell was not the original example, since our author did not possess the species (as we know by his lists) when he first described it. It is my duty, however, to record the circumstance.

### ***Murex Neritoides.***

The pictorial synonyms of this shell represent two distinct species: Gualtier and Bonanni, f. 174, correctly portray the *Purpura Neritoides* of authors; the other three engravings were designed for *Ricinula horrida*. The "columella planiuscula," however, clearly indicates the former to have been the object intended, and this is confirmed by the presence of that shell (Kiener, *Purpura*, pl. 22, f. 62) marked for *Neritoides* in the cabinet of Linnæus, by his manuscript correction ("990") of the published reference to Lister, and by his notice, in the proposed new edition, of that very striking feature, the "labium interius punctis 2 maculatum."

### ***Murex hystrix.***

The *Purpura hystrix* of Lamarck has decidedly no claim to be considered the *Murex hystrix* of Linnæus. Had it been so, why should the coloured representation of it in Regenfuss (pl. 3, f. 32) have been referred by our author to *M. hippocastanum*? When the species first appeared, in the tenth edition of the 'Systema,' the short diagnosis was accompanied only by the synonym of Argenville, whose engraving was indisputably meant for *Ric. arachnoides*, a shell which, as we have seen, was termed *M. ricinus* by our author. The single line and a half of unillustrated description does not suffice for the determination of any species. Let us turn, then, to the 'Museum Ulricæ.' The account in that work, although scarcely sufficient to point out any shell with positive cer-

tainty, clearly forbids our identifying a *Purpura* with so richly a coloured mouth as the Lamarekian *hystrix* with a species whose aperture is expressly stated to be white: indeed, the whole description in that work applies very fairly to *P. echinata*, or to an immature example of the white-spined variety of *R. arachnoides*. The erroneous identification possibly arose from the circumstance that the cited figures of both Seba and Argenville bear some slight resemblance to the *Purp. hystrix* of authors. The former, referred to only in the twelfth edition of the 'Systema' (the second "60, f." was a typographical redundancy), is a most uncertain figure, that is at least equally like the spinous form of *P. mancinella*; the latter is a back view, whence originated the mistake of our author in quoting it. What, then, was the *Murex hystrix* of Linnæus? His cabinet does not assist us; judging solely from his publications, it must assuredly be regarded as an immature example of *ricinus*.

### ***Murex mancinella.***

It is probable that an immature example of the *Ricinula spectrum* of Reeve was the original of this species, at least such a shell would answer to the description in the 'Systema,' and two adult examples of it (Mart. Conch. Cab. iii. f. 971, named *Purp. Martiniana* by Anton) are so marked in the Linnæan collection. No drawing of it having been published at that period, Linnæus has indicated the two nearest approaches to a representation of it he could find in the respective figures of Rumphius and Argenville. The latter, a very rude engraving, only cited in the twelfth edition, was also more correctly referred by himself to *Buc. patulum*; the former was a dorsal view of *Purpura echinata*, a shell which does not exhibit the "columella striata" of the diagnosis. Hence there is no definition in the 'Systema,' for such a term can scarcely be applied to a description of barely two lines elucidated! by two discordant synonyms. Naturalists, consequently, sought in the 'Museum Ulricæ' for the obscure species of the earlier publication, and have bestowed the name of *Purpura mancinella* upon a shell (Kiener, *Purp.* f. 46) which so fairly corresponds

with the details of that work that we may reasonably accept of the traditional identification. It must not, however, be confounded with the species of the 'Systema,' as its columella is perfectly smooth.

### ***Murex hippocastanum.***

Why the *Purpura* termed *hippocastanum*, from a belief in its identity with this Linnean species, should ever have been selected as its representative, seems passing strange, for not one of the many figures cited in both editions of the 'Systema' was designed for it. And this was not for want of correct published delineations of that well-known shell, since it had been portrayed by Regenfuss (pl. 2, f. 18), Gualtier (pl. 43, f. V.), Seba (iii. pl. 52, f. 67; pl. 60, f. 12), &c. The "apertura — edentula" of the 'Museum Ulricæ' shows that it was not designed in that publication. The fairest way to ascertain what our author really intended when he constituted the species is to strictly contrast the characters of the shells delineated in the engravings referred to with the features demanded by the diagnosis. The painting of Regenfuss was decidedly meant for the *Purpura hystrix* of authors, and Klein's copy of Rumphius, pl. 24, f. C (cited, likewise, in the 'Museum' and in the tenth edition of the 'Systema') probably represents the same; the figures, at all events, exhibit, as in that species, more than four rows of spines, and hence are excluded, as illustrative, by the word "quadrifariam": Gualtier (pl. 31, f. F) has inaccurately, and Rumphius, in his plate 24, f. 4, somewhat more correctly, depicted the *Pyrula galeodes*; the "4" was possibly, however, a typographical mistake for the previous "C," since the attached name belongs to C, and Klein's engraving (a copy of C) was still retained, as a synonym, in the twelfth edition of the 'Systema,' where alone the 4 has been substituted. Be that as it may, *galeodes* suits not the "apertura transversim striata" of the description; hence the name cannot be assigned to that *Pyrula*, although a specimen of it is marked, in the Linnean cabinet, with the numerals indicative of that shell. Our author, judging from his list, did not possess an example

when he first constituted the species, and evidently altered his ideas when he published his final edition, for he there queries the cited figure of Argenville. Now this drawing, although ill executed, is not unimportant; it appears to have been designed for the *Purpura pica*, and that shell alone of those referred to corresponds with the expression "apertura transversim striata." It might, also, be declared somewhat spinous in four rows, for although the two upper series of spinous knobs are the more conspicuous, there are, likewise, obsolete nodosities upon and above the canal.

In the synonymy of the 'Museum Ulricæ' *hystrix*, *galeodes*, and *pica* have each a single representative figure, but the "albo nigroque varia" suits the latter alone. Indeed, the whole description is so applicable to *pica*, especially the "spinæ, serie triplici" (for the canal belt cannot, without straining, be termed spinous) and the "apertura edentula," that Karsten has described that shell as the *hippocastanum* of Linnæus.

### **Murex senticosus.**

The *Phos senticosus* of authors (Chemn. Conch. Cab. vol. xi. f. 1864) is marked for this shell in the Linnean collection. The cited engravings, although each of them conveys some idea of one or more of the characteristics, are very unsatisfactory; the I of Gualtier, and, at the least, the 47 of Seba must certainly be excluded; and however much resemblance to it may be found in Bonanni's rude figure, his drawing, as we learn from the explanatory text, was not designed for it, being a magnified representation of a minute Adriatic shell. Again, Argenville's figure is much too large for it, and, as well as 45, 46 of Seba, too short-spined. The new references added in the revised copy, "Rumph. Mus. t. 29, f. N" and "List. t. 967," are somewhat more illustrative, although the former is very rude, and the latter by no means a certain delineation of the species. The generic allocation was scarcely decided upon by Linnæus, who has written "Inter Buccina simile" in his own copy.

### ***Murex melongena.***

The *Pyrula melongena* (Kiener, Coq. Viv. *Pyrula*, f. 1) of authors is marked for this shell in the Linnean cabinet. From the accuracy of the synonymy the species was readily identified by naturalists. Plate 904 of Lister's 'Historiæ' was correctly referred to in the revised copy, where, too, "*Rore glauco obducta*" and "*Jamaica*" (the last copied from Lister) have been added.

### ***Murex cariosus.***

The conclusion of Deshayes, that this species would find its representative in the *Melanopsis costellatus* of Férussac (Mem. Soc. H. N. Paris, vol. i. p. 157) is confirmed by an examination of the Linnean collection. The only specimens in the cabinet which precisely answer to the definition are some young examples (pl. 2, f. 6) of the many-ribbed variety (with from 14 to 17 costæ on the body), a form which I believe to be specifically identical with the more remotely ribbed *Buccinum Maroccanum* of Chemnitz (pl. 210, f. 2082, 2083), which I have received along with it from Seville. The elevation of the spire varies so greatly in the species, that Rossmässler's drawing could not be cited as an exact portraiture; the belt of nodules, too, which, in some individuals, forms a connected spiral band adjoining to, though clearly separated from, the suture, in others is obsolete or scarcely distinguishable. The following manuscript note, in our author's own copy of the 'Systema,' "*An potius Buccinum, affine B. præroso, sed majus et plicatum,*" reveals that he doubted the appropriateness of the generic position he had assigned it: the comparison with *prærosus* throws light upon its affinities.

### **Murex Babylonius.**

The *Pleurotoma Babylonica* of authors (Sowerby, Conch. Man. f. 379) is marked for this species in the Linnean cabinet. In the revised copy of the 'Systema' 52 (as in the 'Museum Ulricæ') has been substituted for 51 in the reference to Gualtier: the synonymy thus amended becomes correct, although some of the cited figures are of rather rude execution. The details of the 'Museum Ulricæ' answer to the well-known characteristics of this graceful shell.

### **Murex Javanus.**

The *Pleurotoma nodifera* (Crouch, Introd. Lam. Conch. pl. 17, f. 4) of authors is marked for this species in the Linnean cabinet, and correctly agrees with its description.

### **Murex colus.**

The *Fusus colus* of authors (Martini, Conch. Cab. vol. iv. pl. 144, f. 1342) is marked for this species in the Linnean cabinet. Naturalists have long recognised that shell as the more typical form of *colus*, through the description in the 'Museum Ulricæ,' and the careful selection in that work of the only three figures (Rumphius, Gualtier and Argenville) that are really illustrative of the intended type. Klein's cited drawing is a bad copy of Lister, plate 917, f. 10, which Deshayes refers as a variety to *Fusus colus*. The synonymy in the 'Systema' is very bad, especially in the twelfth edition, where *F. longissimus* was introduced by the reference to Seba (19 was a misprint for 79; plate 19 only contains *Crustacea*), and great latitude of variation permitted by the addition of "Variat ventre tereti et angulata."

## ***Murex Morio.***

This species first appeared in the tenth edition of the 'Systema,' with only the synonyms of Bonanni and Regenfuss, whose figures exhibit the *Fusus Morio* (Kiener, Coq. Viv. Fus. pl. 23, f. 2) of authors. The details of the 'Museum Ulricæ' (where the 357 of Bonanni was misprinted 358) accord precisely with that species, and amend the "columella rugosa" of the diagnosis, by the expressions "columella—glabra" and "labium exterius—interiore latere rugosum." Hence the species, which is still preserved in the Linnean cabinet, and alone of its contents answers to the definition, has been generally recognised by conchologists. Lister's plate 928 (the variety *coronatus*) has been referred to in the revised copy of the 'Systema.'

The reference to Seba in the twelfth edition of the 'Systema' has been misprinted; plate 88 contains bivalves only; it should have been 80, as in the 'Museum Ulricæ:' pl. 52, f. 5 represents *Pyrula Ternatana*, and pl. 52, f. 6, has been generally quoted for *Fusus cochlidium*: the colouring of the former forbids our confusing it with the Linnean species; the latter has already been constituted distinct by Linnæus himself. Adanson was also misquoted, there being no figure 31 in any plate, except 9. The synonymy thus corrected becomes accurate enough: some of the smaller figures of Seba, however, do not represent, as has been supposed, the fry of this species, but of *melongena*, &c.

## ***Murex cochlidium.***

The correctness of the synonymy, and the details of the 'Museum Ulricæ,' enabled naturalists to recognise this scarce shell (Chemn. Conch. Cab. vol. x. pl. 164, f. 1569) at an early period. An immature individual (pl. 5, f. 5), with the folds more conspicuous than ordinary, is marked for it in the Linnean cabinet, and seems intermediate in aspect between the old engravings of it as a *Murex* and the modern representation



of it in Reeve as a *Pyrula* (same species?): the specimen in some respects reminds us of *P. Ternatana*. It is not unimportant to remark that the original description was not taken from that specimen which Linnæus did not possess when he published his tenth edition.

### **Murex spirillus.**

The *Pyrula! spirillus* of Lamarck (Swains. Zool. Illus. ser. i. vol. iii. pl. 177) is partially marked (55) for this species in the Linnean collection, and, alone of the contents of the cabinet, exactly answers to its description. The striking peculiarity of its features and the comparatively ample description in the 'Systema' enabled naturalists to easily identify it, although unillustrated by any synonyms. If, indeed, any figures of the shell were extant at that period, they are not readily to be found in the works ordinarily consulted by our author.

### **Murex canaliculatus.**

The *Pyrula canaliculata* of authors is marked (Kiener, Coq. Viv. Pyr. pl. 10, f. 1) for this species in the Linnean cabinet. The stated locality and the synonym of Gualtier are correct, but Seba represents a sinistral *Pyrula* (quoted by Lamarck for *perversa*), and the engraving of Ellis (copied by Baster) is so uncharacteristic, that it has been ascribed by Deshayes to *carica*. The page in Ellis's publication is 85, not 851; the fry and egg-case delineated in his plate belong to the shell he has figured, and not to the *granum* of the tenth edition, which latter is declared on good authority (Brander) to come from the Mediterranean.

### **Murex Aruanus.**

The synonymy of this species includes both *Fusus probosciferus* (Rumphius, Bonanni), and *Pyrula carica* (Gualtier): the

specific epithet was derived from the former, but the latter alone agrees with the “*spinoso-coronata*” of the diagnosis, and must consequently retain the Linnean appellation. The “*Spira brevis*” and other details of the ‘*Museum Ulricæ*’ support this conclusion, which is corroborated by a reference to plate 800 of Lister’s ‘*Historiæ*,’ and the habitat “*Campegiam*” in the revised copy of the ‘*Systema*.’ Our author did not possess this shell when he first described it; *P. carica*, however, is present in the collection, but unmarked. The name *Aruanus* has been written upon a specimen of *P. vespertilio*, which would not ill answer to the description in the ‘*Museum*,’ but the letters do not resemble the handwriting of Linnæus.

### ***Murex perversus.***

The *Pyrula perversa* of authors (Reeve, Conch. System. pl. 236, f. 5) is marked for this shell in the Linnean collection, and “List. 907, 908” has been added in the revised copy of the ‘*Systema*.’ All the synonyms are usually accepted as correct, but Gualtier’s engraving (manifestly taken from a broken example), in the multiplicity of modern illustrations, is not worthy of being quoted.

### ***Murex antiquus.***

The *Fusus antiquus* of authors (Kiener, Coq. Viv. Fusus, pl. 18, f. 1) is marked for this species in the Linnean collection, and “*Tenuissime transversim striatus*” has been written in the revised copy of the ‘*Systema*.’ Although the cited engraving of Gualtier reminds one of the size and general aspect of the shell, it cannot truly be referred to it. Yet the citation of it, combined with the stated locality, probably conduced to the correct identification of the species, since no other Swedish or Norwegian shell bears so much resemblance to the figure as the *Fusus antiquus*. The ‘*Fauna Suecica*’ affords no additional descriptive particulars: the account was copied verbatim from the ‘*Systema*.’ Linnæus has shown a more than

ordinary degree of carelessness, by omitting to quote Seba's many delineations of it (vol. iii. pl. 39, f. 75; pl. 83, f. 3 to 6; pl. 93, f. 3), and by annexing the representation of it in Lister (Ang. t. 3, f. 1) to the synonymy of the succeeding species.

### **Murex despectus.**

The *Fusus despectus* of authors (Kiener, Coq. Viv. Fus. pl. 19, f. 2) is marked for this shell in the Linnean collection. As the description (No. 2166) in the 'Fauna Suecica' is a mere verbal repetition of that of the 'Systema,' the species must have been chiefly recognised by the delineation of it in the 'Iter West-gothicum;' for the synonym of Lister would more correctly have been annexed to the preceding *Murex*.

### **Murex Tritonis.**

The *Triton variegatus* of Lamarck (Reeve, Conch. Icon. vol. ii. Trit. f. 3, b) is still preserved in the Linnean collection, and alone agrees with the species as originally defined in the tenth edition of the 'Systema,' where, besides Gualtier and Rumphius, Bonanni (Recr. pt. 3, pl. 188) was rightly quoted, though, strange to relate, omitted in the twelfth edition, where Seba and Rondelet (*Trit. nodiferum*) were added to the previous references. Linnæus had also designed to quote "List. t. 959." The twelve figures that are contained in the cited plate of Seba all belong to the *Triton variegatus*, but exhibit various forms of it. Conrad, in the new series of the 'Journal of the Academy of Natural Sciences of Philadelphia,' has suggested that the Lamarckian *T. variegatus* should be subdivided into three species, for which he has proposed the names *T. Tritonis*, *T. nobilis* and *T. variegatus*, for the shells respectively depicted as the latter, by Reeve at figure 3, b and 3, a; and by Kiener in plate 2 of his Monograph of the *Tritons*. As Conrad has referred the figures of Bonanni, Rumphius, Gualtier, and the three principal ones of Seba (by a typographical error, he has quoted the plate as 73), to the first of these three, he has thus

reserved the Linnean name for that form, which, moreover, is the only one of them contained in the Linnean cabinet, though of course the Swedish naturalist would not have appreciated the subtle distinctions on which this subdivision has been based.

### **Murex pusio.**

The *Fusus articulatus* (Kiener, Coq. Viv. Fus. pl. 26, f. 2) is marked for this shell in the Linnean collection. The specified painting corresponds so ill to that of ordinary adult examples, that, despite of the inscribed numerals and the harmony of the cited figure of Gualtier, one might have distrusted the identification, had not a second individual, an immature one, that precisely answers to the description, in which the imperfectly connected bands assume the appearance of longitudinal streaks, and the spiral throat-striæ are not developed, been also marked for the same species.

The erroneous locality (the Mediterranean) was derived from Bonanni, whose wretched engraving was intended for a magnified representation (as we may learn from the explanatory text) of a small white shell painted with longitudinal streaks that pass from yellowish into black, and having a purplish apex (*Col. corniculata*?). Had the *Polia maculosa* been intended by Linnæus, as some have surmised, he would hardly have referred to plate 52, f. I in Gualtier, but rather to his plate 55, f. G.

### **Murex tulipa.**

The *Fasciolaria tulipa* of authors (Kiener, Coq. Viv. Fasc. pl. 2) is marked for this shell in the Linnean collection. The referred-to figures in plate 57 of Seba had been previously and more correctly quoted for the *Voluta Lapponica*, a shell which presents not the slightest resemblance to *tulipa*. The rest of the synonymy is generally accepted as correct, but apparently includes *F. distans* (Gualt. pl. 46, smaller fig. A.—Seba, pl. 71, f. 31?), a most closely allied congener, of which

the delineations in the older iconographies are not readily to be distinguished from certain varieties of a species so variable in the disposition of its colouring as the present one. The "sutura geminata," and the preference of Lister 711 to 710 (a characteristic representation of *distans*) are strong arguments in favour of the received identification. The species is a native of the West Indies.

### **Murex clathratus.**

The *Fusus Bamffius* (Donov. Brit. Shells, pl. 169, f. 1) of authors still reposes in the box marked for this species in the Linnean collection, and exactly answers to the description and recorded locality in the 'Systema.' Although the cited figure of Klein is not so unlike it, and looks plicated, it was only a distorted copy of Lister, pl. 926, f. 19, which is wholly destitute of folds.

### **Murex dolarium.**

The *Triton dolarium* of authors (Knorr, Délices Yeux, pt. 2, pl. 24, f. 5) is marked for this species in the Linnean collection, and agrees with its description. The cited figure of Bonanni, which represents a white Portuguese shell, has also been referred to it, though with doubt, by Lamarek and others; it was probably intended for it, yet the tail is delineated as too produced for an adult example, and the magnitude as too great for an immature one. It is strange that plate 52, f. 20, 21, of Seba's third volume, where the species was characteristically enough portrayed, has not been quoted by Linnæus: he did not, however, possess that costly publication.

### **Murex corneus.**

The *Fusus lignarius* of authors (Kiener, Coq. Viv. Fus. pl. 22, f. 1) is marked for this shell in the Linnean collection, and

agrees with both description and assigned locality. From the erroneous reference to Lister, a British species (*F. Islandicus*, var. *gracilis*) has been thus named, but it does not exhibit the required peculiarity of margin: a similar cause excludes the figure in the 'Iter Westgothicum,' which one might rather have expected would have been quoted for *clathratus*, from being regarded as illustrative. The reference to Gualtier's plate, correctly printed 46 in the Swedish editions of the 'Systema,' erroneously became 56 in the Viennese: 56, f. F represents a *Cerithium*, which bears no resemblance to the description. One feels surprised that Linnæus did not refer to the work of Bonanni, who has both delineated, in his third part, the species really designed (f. 72) and the shell confused with it (f. 53) by the citation of Lister.

### **Murex lignarius.**

The *Fasciolaria Tarentina* of Lamarck (Payr. Coq. Corse, pl. 7, f. 16) is marked for this species in the Linnean collection, and agrees with the description and assigned locality. All the cited figures bear a general resemblance to it; Bonanni's was clearly, and Gualtier's not improbably, designed for it, but Seba's certainly not, for the whorls are represented in his drawing as too much striated spirally to agree with the expression "læves."

### **Murex trapezium.**

The *Fasciolaria trapezium* of authors (Kiener, Coq. Viv. Fasc. pl. 6) is marked for this species in the Linnean collection, and plate 931 of Seba correctly referred to in the revised copy of the 'Systema.' The H should be omitted from the synonym of Argenville, since that figure was designed for *F. filamentosa*: Rumphius, pl. 29, f. E, also, to say the least, is a doubtful representation. The rest of the synonymy may be retained. "Plicata columella uti Voluta" has been written by Linnæus in his own copy.

### **Murex Syracusanus.**

The *Fusus Syracusanus* (Kiener, Coq. Viv. Fus. pl. 4, f. 2) of authors is marked for this species in the Linnean collection, and correctly answers to the description. Bonanni has very accurately exhibited the species designed, and the reference to his engraving doubtlessly enabled naturalists to identify it.

### **Murex craticulatus.**

Rondelet's *Turbo angulatus*, an extremely rude figure, with somewhat the aspect of *Turbinella polygona* or *Fasciolaria Tarentina*, is represented as having its volutions angulated above, and not with rounded whorls in accordance with the description in the 'Systema.' No aid, therefore, can be derived from it; it was manifestly an erroneous reference, and, as well as the locality, taken perhaps from it, was only added in the twelfth edition. The *Turbinella craticulata* (Kiener, Coq. Viv. Turb. pl. 19, f. 2) has been generally accepted as the representative, and, should we understand the "apertura dentata" as explained by "apertura intus striata," answers very correctly to the description. It is somewhat curious, however, that the extant delineations of the species in Lister (pl. 919, f. 13) and Seba (iii. pl. 50, f. 55, 56, and pl. 51, f. 31, 32) should not have been referred to. The shell is not present in the Linnean cabinet.

### **Murex scriptus.**

Philippi, after due examination, has asserted that the *Buccinum* (!) *corniculatum* of Lamarck (Kiener, Coq. Viv. Buc. f. 56) is identical with this long-undetermined species. His decision was confirmed by an analysis of the contents of the Linnean

cabinet, where no other Mediterranean shell (and Linnæus has recorded his possession of an example) agrees suitably with the description.

### ***Murex vertagus.***

The *Cerithium vertagus* (Kiener, Coq. Viv. Cerit. pl. 18, f. 2) of authors is marked for this shell in the Linnean collection. The *Cer. procerum* of Kiener has been confused with it by the reference to Rumphius, which must consequently be excluded. Lister, pl. 1020, f. 83, has been rightly added to the synonymy in the revised copy of the 'Systema.'

### ***Murex Aluco.***

The *Cerithium Aluco* (Knorr, Dêlic. Yeux, pt. 3, pl. 16, f. 5) is marked for this shell in the Linnean collection. In the same box with it are examples of *C. vulgatum* (perhaps the variety "cauda recta brevi" of the 'Museum'), hence, in all probability, the erroneous locality. Gualtier, pl. 57, f. G, and Rumphius, pl. 30, f. O, were apparently designed for *Cer. nodulosum*, to which the description is about equally applicable. Bonanni, f. 83 must, likewise, be excluded from the synonymy. Linnæus appears to have become aware that he had confused two species (at the least), for he has written "2" before it in his own copy, as was his habit in such cases.

### ***Murex fuscatus.***

The *Cerithium radula* (List. Hist. Conch. pl. 122, f. 20) of Bruguière is marked for this shell in the Linnean cabinet, and accurately agrees with the description. In addition to the published synonymy, our author has correctly quoted, in manuscript, "List. 122," an important reference, for had Linnæus designed, as some contend, the *C. muricatum*, he would have cited plate 121 of that work, in preference: that shell, more-



over, is not present in his collection. Neither of the two figures previously cited as illustrative were satisfactory representations: they display nearly an equal resemblance to *muricatum* and *radula*: Argenville's drawing reminds us of the latter by its narrow form and crowded knobs; Gualtier's by the numerous series of granules.

### **Murex torulosa.**

No additional information upon this species is to be obtained from the collection or manuscripts of our author, who did not possess an example, but appears to have drawn up his account of it from the recorded specimen in Gyllenborg's collection. Although the description was not illustrated by any synonymy, the indicated features, however few in number, were so peculiar that they ensured the determination of the species. The *Cerithium torulosum* (Chemn. Conch. Cab. vol. x. pl. 164, f. 1575, 1576), being the only known shell which exhibited the required characteristics, has been recognised for the Linnean *Murex*, and the general assent of writers (Karsten must be excepted) has ratified the identification.

### **Murex radula.**

The quoted figure of Gualtier represents, apparently, a decorticated example of the *Cerithium granulatum* (as depicted by Kiener): hence Born has selected that shell as the representative of the Linnean species. The expression "striis duplici serie punctatis" suits not fittingly a shell which is almost invariably adorned with at least three rows of raised dots; an immature decorticated example, however (Born, Test. Mus. Vind. pl. 11, f. 16, nearly), in the Linnean collection, in which two central rows of raised white dots are alone conspicuous (the infrasutural series being indistinct), so fairly agrees with the described characters that one may readily believe that our author described the species from this uncharacteristic individual. Assuredly no other object in the

entire collection, wherein its presence is asserted in the list that accompanies the tenth edition, at all suits the definition, yet, as no mention of it occurs in the final list (moreover, it equally suits the description of *Buccinum murinum*), no proof of its identity can be derived from that circumstance. Nevertheless probability and tradition favour its pretensions. A closely allied, if indeed distinct shell, the *Cerithium radula* of authors (*M. fuscatus* of Linnæus), has been suggested as the more fitting representative; it is scarcely likely, however, that its spinous knobs would have escaped comment, or been regarded as simple tubercles.

### **Murex asper.**

The *Cerithium asperum* (Mawe, Conch. pl. 26, f. 6) of authors is marked for this species in the Linnean collection, and thus confirms a recognition, which, from the paucity of the recorded features, and the absence of illustrative synonyms, was, of necessity, somewhat conjectural. The “singulis 4 pluribus; ore spinis, &c.” is so obscure in meaning, that I cannot but surmise it to have been a misprint for “singulis 4 pluribusve spinis, &c.”

It is somewhat singular that all but the first of the four synonyms attached to the next species belong properly to this shell. Might it not have been an error of transcription or of the press?

### **Murex granulatus.**

The “cauda acuta, ascendente” forbids our identification of this shell with the *Cerithium granulatum* figured by Kiener, the drawing of which in Bonanni (pt. 3, f. 327) would scarcely have been unnoticed by Linnæus had perfect examples been observed by him. Whether the latter can be the species so named by Bruguière seems to me somewhat questionable.

The synonymy would have been more appropriate for the preceding species, to which three of the cited figures bear

much resemblance; Argenville's, indeed, seems intended for *asper*, and Rumphius's, copied by Klein (f. 119), though it looks rather granosely tuberculated than actually prickly, and to have too many rows (5) of grains upon each volution, has also been generally referred to that shell. As to Bonanni, his sketch appears intended for the *Turbinella lineata*, and was copied by Klein (f. 120) likewise, though the latter has not been quoted by Linnæus. Since the engraving of Rumphius best suits the diagnosis, I had hoped to have discovered in the Linnean cabinet a precisely similar *Cerithium*, but find nothing that approaches nearer than the preceding species. Deshayes, indeed, has already suggested that we should refer it to that shell, of which there are both perfect and imperfect examples in the collection; and as more than one species there would suit the brief and too inclusive description, if disconnected from the synonymy, and not one when combined with it, it seems desirable, by this annexation (with a "?" attached) to banish from our overcrowded catalogues the name of a *Murex* confessedly characterised from imperfect specimens.

### ***Murex decollatus.***

As this shell was avowedly described from De Geer's collection, it was not to be hoped that a type would be found in the cabinet of Linnæus, none of whose specimens, and, indeed, he has not asserted his possession of an example, answer to the described features, which unfortunately are wholly insufficient for the purpose of definition.

The supposition of Bruguière, that the species was identical with the *Cerithium* (*Potamis*) thus named by him, although ingenious, must, I fear, be erroneous, for that shell neither corresponds with the "margine superiore attenuato," nor with the "interjectis sulcis atris opacis" of the description. Nevertheless it is not desirable to suggest another hypothetical representative.

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## TROCHUS.

### *Trochus Niloticus.*

The *Trochus Niloticus* of authors (Chemn. Conch. Cab. vol. v. pl. 167, f. 1605) is marked for this shell in the Linnean collection; and "List. 617" is correctly added to the synonymy in the revised copy of the 'Systema,' where "labio interiore subbilobo" has been annexed to the diagnosis, and "Figura lateribus convexa" concludes the details. The synonyms are generally accepted, except the reference to Argenville; the figure of Olearius, however, is too rude for certain identification, yet exhibits the general aspect of the species.

### *Trochus maculatus.*

The synonymy of *T. maculatus* in the tenth edition of the 'Systema,' when purified by the comparison of the cited figures with the "carina dentata" of that publication, leaves only the young of *Niloticus* (Rumph. pl. 21, f. 3, 4) in harmony with the description: the majority of the engravings represent mature examples of the same shell. In the 'Museum,' and in the subsequent edition of the 'Systema,' different diagnoses were substituted, and a very different species was intended. None of the four *Trochi* (*Niloticus*, *virgatus*, &c.) indicated by the references of the former publication, correspond with the details there specified, which, although many in number, are not sufficient, without an illustrative figure, to define a member of so extensive a genus as *Trochus*. From the enumeration of the points of difference between this and the preceding, annexed to the latter in the twelfth edition of the 'Systema,' we incidentally learn that the base was flat and sculptured, the throat grooved, and the pillar toothed (the "obsolete bilobo" has been changed to "obtus dentato" in the Linnean manuscript).

Now all these features, as well as those included in the diagnosis, are present in the specimen preserved in the marked receptacle of this species in the Linnean cabinet. Of this shell (pl. 3, f. 7) I know no adequate delineation in the older writers; no wonder, then, that our author's synonymy was incorrect, and that his species, consequently, has never been satisfactorily identified. For, although, by a kind of tacit assent, the supposed recognition by Chemnitz, who, nevertheless, has called it *T. sanguinolentus*, *Nicobaricus*, &c. (Conch. Cab. vol. v. pl. 168, f. 1615 to 1618), has been generally accepted, it has not escaped the acumen of Deshayes that the Chemnitzian shell was not identical with the Linnean *maculatus*. This conclusion he arrived at through a critical analysis of the synonyms. For had our author wished to indicate the supposititious *maculatus*, he would have cited plate 61, f. DD, of Gualtier (a by no means uncharacteristic representation of it), and not his plate 61, f. E, which latter, although not precisely the species intended, is yet the nearest approximation to it of any of the old drawings then extant, and was evidently selected from the many allied *Trochi* engraved on that plate, on account of its broad base, its depressed conic shape, and its large flammules. The figures in Rumphius were possibly quoted because of the folds at the base of each whorl, or perhaps were left behind, when *Niloticus* was severed from it, from not being held sufficiently characteristic of that shell; they are meant, says Deshayes, for the young (*marmoratus*) of *Niloticus*; so, too, was the cited figure in Argenville, according to Lamarck. The rudeness of Bonanni's engraving forbids any precise appropriation of it; it presents, however, the general features of the group in which *maculatus* is included. The subjoined description of the Linnean specimen is rendered necessary by the obscurity of the species:—

Shell broadly conical, strong, not much elevated, dilated at the base, irregularly radiated from the apex with dull reddish crimson large flame-like spots, which occupy (in this individual) a larger portion of the surface than the whitish ground. General outline of the sides arcuated. Whorls about seven, distinctly sutured, a little concave above, slightly imbricating each other below; each of the principal ones adorned with five rows of moderately-sized closely-disposed oblique tubercles, that are linear and broadest on the first series, longitudinally oval on

the second and third, and more linear and almost comma-shaped on the fourth and fifth (which two last are merely separated by a single stria), where certain of them, arranged at regular but short intervals, being larger and more raised than the rest, seem to plicate the base of each turn; intervals between these rows narrower than the elevations, and roughened by linear continuations, as it were, of them. Base plano-concave, sharply angulated at the edges, whitish, with narrow radiating dull reddish wavy streaks, which, in crossing the narrow spiral lyræ seem to articulate them. These last are not so broad as their intervals, not much raised, very numerous, and rather crenated than beaded. Aperture nacreous, much compressed horizontally; throat with raised spiral lines; pillar with five or six teeth. A false umbilicus.

### ***Trochus perspectivus.***

There can be little doubt that Linnæus would have regarded all the larger *Solaria* as mere varieties of the same shell, and had the 'Systema' been his only publication, it would have proved impossible to determine for which of the many allied congeners the name should be retained. The limitation effected by the 'Museum Ulricæ' enables one to particularise the species which displays the best claim to be regarded as the typical *perspectivus*, and this assuredly is not the *Solarium* to which the name has been attributed by Lamarck ("cingulis albo et fusco, aut castaneo, articulatis prope suturas") and Kiener, but the *Solar. formosum* of Hinds (Proc. Zool. Soc. 1844.—Chemn. Conch. Cab. vol. v. pl. 172, f. 1693.—Geuens, Conch. pl. 25, f. 267, 268.—Seba, Mus. vol. iii. pl. 40, f. 13, 14, 28), which corresponds exactly to the stated colouring, "picti supra linea fusca albæ superinducta." Specimens of this very peculiarly banded shell are still preserved in the Linnean cabinet. Lister, plate 666, which seems a tolerable representation of *formosum*, and was apparently copied from the cited figures of Bonanni, has been referred to by Linnæus, in his own copy, in lieu of his previous erroneous reference to that author.

So thorough a revision is required of the synonymy of all the

*Solaria*, that I shall only observe, at present, that figures 1, 2, 41, 42, of Seba, and the exterior O of Gualtier, must, at the least, be excluded as representations.

### ***Trochus hybridus.***

Even before the publication of the 'Museum Ulricæ,' that work was referred to for a more ample account of the *Trochus hybridus* than was furnished by the bald outline of its characters in the 'Systema.' It is to the Dronningen Museum, then, and not to the private cabinet of our author, that we must look for the type of this species. The name was probably significative of its being a mongrel "*Staircase*," a link between *perspectivus*, of which Linnæus appears to have almost deemed it a mere aberrant variety!, and the succeeding *Trochi*.

From the details of the 'Museum Ulricæ' naturalists have identified the species with the *Solarium hybridum* (Chemn. Conch. Cab. pl. 173, f. 1702, 1703), which traditional recognition, although the Mediterranean locality renders it not improbable that the allied *Sol. luteum* was the shell designed in the 'Systema,' it is not desirable to gainsay. Strictly speaking, "bidentata" is not appropriate for either; the expression, however, evidently refers to the extremities of the cord-like ridges that flank the columellar canal.

### ***Trochus cruciatus.***

The value of the tedious analytical process of examining the entire contents of the Linnean cabinet, with a view of ascertaining whether more than one shell suits the meagre description published by our author, is here proved by the recognition of this hitherto uncertain species in a variety of the *Monodonta Vielloti* of Payraudeau, which precisely and exclusively agrees with the description and the stated locality. The white cross is formed, as indeed is suggested in the "fasciis, &c." of the definition, by the union of the pallid markings in four streaks that radiate from the apex; in fine specimens there are two

teeth on the pillar, but not in the individuals contained in the collection. This recognition has, I believe, been already made by De Blainville, and probably on the grounds that no other Mediterranean shell known to him possessed the peculiar though scanty features attributed to the species.

As the representation in Payraudeau does not exactly show the peculiarities of the specimen, it has been delineated in our fifth plate (f. 6).

### **Trochus Pharaonis.**

The description in the 'Museum Ulricæ' was so clear, and the synonymy in that publication (where Gualtier and Argenville were exclusively cited) so accurate, as to ensure the recognition of this species. The *Trochus Pharaonis* of authors (Chemn. Conch. Cab. vol. v. pl. 171, f. 1672, 1673) is still preserved in the Linnean cabinet, and alone agrees with that definition. The referred-to figure of Lister, and possibly of Petiver likewise, represents an allied congener from Madagascar (Geuens, Conch. Cab. pl. 12, f. 101) that is finer grained and less articulated; it is not present in the collection, and, though formerly held a variety, the drawings of it must be omitted from a correct synonymy; so, too, must Adanson's figure, which suits not the "umbilicata" of the description. The engraving of Bonanni is a greatly magnified yet recognisable representation of *Pharaonis*, for which Rondelet's rude figure, also, seems to have been designed.

### **Trochus magus.**

The *Trochus magus* of authors (Donov. Brit. Shells, vol. i. pl. 8, f. 1) is preserved in the box thus marked in the Linnean cabinet. Naturalists must have experienced some difficulty in recognising this shell, since Linnæus, for want of published characteristic engravings of it, has referred us to some (Seba, Gualtier, Regenfuss) which only exhibit an approximation to its features: the painting of Regenfuss, indeed, has been else-



where rightly quoted by him for *T. tuber*. The traditional identification was probably established from Argenville's figure having been fortunately selected as the typical one; an idea founded upon the name "*la Sorcière*," Latinised by *magus*, attached to it (not always a safe method of proceeding). The Mediterranean locality, and details of the 'Museum Ulricæ,' where an ash-coloured variety seems to have been described from, contributed, it is probable, to this decision.

### ***Trochus modulus.***

As fishes, not shells, are delineated in the thirty-fourth plate of Seba's folio, it is manifest that the faulty reference was a typographical error. Linnæus did not himself possess this species, which, owing to the very peculiar combination of its recorded features, has been generally recognised in the *Mondonta* thus named by Lamarck (*Tr. lenticularis*, Chemn. Conch. Cab. vol. v. pl. 171, f. 1665).

### ***Trochus muricatus.***

Deshayes has confessed his inability to recognise this species from the meagre account of it in the 'Museum,' nor has any other naturalist been more successful. For the cited figure of Gualtier (the only pictorial reference), a very rude drawing, with somewhat the aspect of *Littorina muricata*, does not display the slightest vestige of an umbilicus, as required. It is highly probable that the Linnean shell belonged to that genus, but neither the manuscripts nor the cabinet of our author (who did not possess an example of it) throw any additional light upon the subject. One might have hoped from the limiting locality, that Philippi, who has so ably investigated the *Testacea* of the Mediterranean, could have found some species there to which the few recorded characteristics would exclusively apply; but experience has taught me that little confidence can be reposed in the unauthenticated habitats of our author.

### ***Trochus scaber.***

The cited figure of Argenville, which with more propriety might have been quoted for *T. maculatus*, displays no resemblance to the features indicated in either the 'Systema' or the 'Museum Ulricæ,' and although the details in the latter publication are very full, no satisfactory identification of the species has been effected. Chemnitz, indeed, has delineated a shell which he has hesitatingly suggested as its representative, but the characters of it are so utterly dissimilar to the recorded ones, that Schröter, Dillwyn, and even Gmelin, though unable to propose a better substitute, have expressed their doubts of its identity. Linnæus did not himself possess an example, so that our sole hope of ever recognising it must rest in the 'Museum Ulricæ.'

### ***Trochus varius.***

The specimen contained in the marked receptacle of this species in the Linnean cabinet is precisely the shell thus named in the 'Enumeratio Molluscorum Siciliæ' of Philippi (vol. i. p. 180, pl. 10, f. 19, tolerably). As its identification had previously rested upon no higher ground than the correspondence of the Mediterranean shell with the dozen words of the 'Systema' (for the description was not accompanied by any pictorial definition), this confirmation is not unimportant.

### ***Trochus cinerarius.***

The *Trochus cinerarius* of Montagu (Donov. Brit. Shells, vol. iii. pl. 74, except middle figure) is marked for this species in the Linnean cabinet. How naturalists contrived to recognise the shell is not a little astonishing, for not only was the description most utterly inadequate, and unillustrated by any synonym (for the account in the 'Fauna Suecica' is a mere transcript of

the words of the 'Systema'), but even the few features that are specified do not accord with the existing characteristics, for the oblique painting is not composed of pale bands, but dusky lines, and the whorls are not rounded, but almost planulate. The Linnean appellation can have no claim to precedence, on its own merits; to quote an inapplicable description is but to foster error. The shell has been termed *lineatus* (a suggestive epithet) by Da Costa, who has clearly defined it, and, since it was impossible for him to recognise the Linnean shell from its published definition, it seems but justice to retain his name for it.

### ***Trochus divaricatus.***

The *Trochus divaricatus* of Philippi (Payraud. Coq. Corse, pl. 7, f. 3, 4 as *Monod. Lessoni*) is preserved in the box thus marked in the Linnean cabinet, where it exclusively answers (thanks to the peculiarity of colouring) to the definition. The locality enabled Philippi to detect the species, despite of the insufficiency of the description and the absence of synonyms.

### ***Trochus umbilicaris.***

In the box marked for this shell in the Linnean cabinet is preserved the *Trochus fuscatus* of Gmelin and Deshayes (Born, Test. Mus. Vind. pl. 12, f. 1, 2), which admirably agrees with the description of it by Linnæus. This confirms the recognition of it by Born and Philippi, who must have arrived at their conclusion from faith in the assigned locality, since the short and unillustrated description would in all probability apply to more than one species of *Trochus*.

### ***Trochus solaris.***

This graceful shell is one of the very few which first appeared in the 'Museum Ulricæ,' where the copious details enabled

naturalists to recognise it (Chemn. Conch. Cab. vol. v. pl. 173, f. 1700, 1701), despite of its very faulty synonymy. The incorrectness of the latter (in which Rumphius alone can, perchance, be retained) was eventually detected by our author, who, in his own copy, has queried the reference to Gualtier, appended "mala" to that of Bonanni, and written "male" after Argenville; the want of an accessible accurate delineation forced him to quote such as might approximately remind one of its peculiar features.

Our author bestowed his own specimen upon the Royal Museum, as he has with pride recorded, and does not appear to have possessed a second example.

### ***Trochus bestiarius.***

As in the references, so in the collection, two *Rotellæ*, the *lineolata* (Crouch, Introd. Lam. Conch. pl. 16, f. 14) and the *monilifera* (Sow. Genera Shells, Rot. f. 1) of Lamarck, were included under this appellation. If the name should be preserved at all, it is preferable to bestow it upon the former, since the stated colouring is more in harmony with its painting, and the remarkable sculpture of the latter is not mentioned in the description.

### ***Trochus labio.***

Two, or more, very distinct *Monodontæ* (in the Lamarekian sense), have, at various periods, received this appellation from Linnaeus. For the "striato-tuberculata; apertura dentata" of the original diagnosis was changed in the twelfth edition of the 'Systema' to "substriata, columella unidentata," which accounts for the anomaly in the Linnean collection, that whilst the *M. labio* of authors (Born, Test. Mus. Vind. pl. 12, f. 7, 8) was described in the marked receptacle of the species, a loose example of *M. fragaroides* was found inscribed with the indicative numerals. I consider the latter, to which alone the term "substriata" can be applied, and to which the synonym of Gualtier belongs, to be the shell intended in the final edition, but the

former to be the earlier and tuberculated *labio* represented, and so designated, by Rumphius, from whom the specific appellation was derived. Strange to relate every one of the references exhibits a different species; Lister's drawing, however, reminds one of that of Rumphius, and Argenville's a little of those in Gualtier.

### **Trochus tuber.**

Some partially erased numerals on a young individual of the *Trochus tuber* of authors (Chemn. Conch. Cab. vol. v. pl. 165, f. 1572), in the Linnean collection, evidence that the specimen was the type of one of the species of the 'Systema,' and, since its features correspond with those of no other shell described in that publication, it is manifest that it must be regarded as the representative of *tuber*. The immature state of the example accounts for the published characters, which are by no means suitable for the adult shell. Regenfuss was correctly referred to—hence probably the established recognition—but the illustrative figure of Argenville would have been I, not R as quoted. The published locality was erroneous; "Jamaica" has been written in the revised copy.

### **Trochus striatus.**

The examples preserved in the marked receptacle of this species in the Linnean cabinet precisely coincide with those forwarded to me by Dr. Philippi, as the shell recognised by him for it in his descriptive list of Sicilian shells (vol. i. p. 176; vol. ii. p. 150). It has been delineated in the present work (pl. 5, f. 7), as I cannot call to mind an exact portraiture of the specimens.

### **Trochus conulus.**

The synonymy of this shell is very faulty. Gualtier, f. N, having been quoted, likewise, for the preceding species, was

doubtlessly a misprint for G (the reading in the tenth edition), but both G and M represent *granulatus*, a *Trochus* for which the expression "lævi" is utterly unsuitable. The reference to Lister was equally erroneous; his very rude figure was possibly meant for the *T. lineatus* of Da Costa, which is also not a smooth species, and hence manifestly not the shell intended by Linnæus.

Bonanni alone has depicted the *conulus* of authors (Philippi, &c.), which being in harmony with the description, and most closely allied, as stated in the text, to *T. zizyphinus* ("sequenti simillima") has very properly been accepted as the true representative. That shell (Chemnitz, Conch. Cab. vol. v. pl. 166, f. 1558, badly) is still preserved in the Linnean cabinet, and alone of the shells there present agrees with the description of the species. It is not surprising that the illustrious Swede, in his days, experienced a difficulty in finding a characteristic representation, since even now it is not easy to cite one in any of the more ordinarily accessible works.

### *Trochus zizyphinus.*

It matters little that the examples of this species in the Linnean cabinet are not marked, since the features described, and the correct references to Lister, Gualtier and Klein, caused the *Trochus zizyphinus* to be readily identified (Brit. Moll. pl. 67, f. 1). As to the rude figures of Argenville and Rumphius, they were only cited with a note of interrogation, and although, in all probability, not designed for the species, display, nevertheless, a general likeness to it. As frequently happens, the *Trochus* described in the 'Museum Ulricæ' was quite different, having an "umbilicus patens." What it may prove becomes of less importance, since the ascribed features do not correspond with those indicated in the previous diagnosis in the tenth edition of the 'Systema,' and consequently the Linnean name cannot be retained for it.

## Trochus telescopium.

The *Cerithium telescopium* of authors (Kiener, Coq. Viv. Cerit. pl. 28, f. 1) is still preserved in the box marked for this species in the Linnean collection. Naturalists easily recognised so remarkable-looking a shell by its description and pictorial synonymy, which latter, by the change of the "t. 5, f. 1" of Lister into "624," as written by Linnæus in his own copy, is rendered perfectly correct.

## Trochus dolabratus.

Despite of the erroneous assertion in the twelfth edition of the 'Systema,' that this salt-water native of the Antilles was an African land-shell, the species intended by Linnæus was easily recognised by the "apertura dentata" of the 'Museum Ulricæ,' and by the reference to Argenville, who has clearly, though rudely, delineated the yellow-lined *Pyramidella dolabrata* of Lamarck (Kiener, Coq. Viv. Pyram. pl. 1, f. 3), two examples of which are preserved in his collection. I do not consider this to be the *Obeliscus dolabratus* of Adams' Monograph, and know not a single adequate representation of it in a characteristic condition: Favanne, pl. 65, f. L, and plate 452, f. 2 of the 'Encyclopédie Méthodique, Vers' seem intended for it; and the *P. terebellum* of Crouch (Introd. Lam. Conch.) appears to me to be the edentulous form of the same shell. "Matura labro intus dentato evadit, et apertura Helicis" has been written in the revised copy; our author evidently considered, as indeed is evidenced by a marked specimen in his collection, that the rufous-lined *P. terebellum* of authors (Reeve, Conch. Syst. pl. 207, f. 9) was an immature state of the same species. His proposed addition of "Pet. Gaz. t. 63, f. 12" to the synonymy would have been far from an improvement, for the *Pyramidella* rudely represented in that work is too slender for even the true *dolabrata*, and looks more like the *O. terebelloides* of Adams.

### ***Trochus perversus.***

One of the marked receptacles in the Linnean cabinet (the inscribed characters, however, rendered illegible by time) contains the *Cerithium perversum* of the 'Animaux sans Vertèbres,' a shell (Payraud. Cat. Moll. Corse, pl. 7, f. 7, 8) ordinarily and not unreasonably identified with the present species. The language, "duplici serie excavato-punctatis, præter margines anfractuum etiam crenato-punctatis," is by no means suitable to express a sculpture consisting of three series of spirally-arranged granules: its origin is, however, explained by the state of our author's specimens, in which the smaller central grains are so far worn down to a level surface that the minute intervals between the rows look like punctures, whilst the coarser series of the upper and lower granules preserve more of their pristine appearance. As these specimens agree the best of those present in the cabinet, and our author has noted their forming part of his collection, I regard their presence as confirmatory of the admitted (though hitherto somewhat problematical) identification.

### ***Trochus punctatus.***

Nothing in the Linnean cabinet answers precisely to the description of this shell. The two species which approach nearest to the indicated characteristics are the *Cerithium lacteum* and the *C. lima* of Bruguière (*C. reticulatum* of British writers), the former of which, being white, does not suit the expression "ferruginea," the latter, having four rows of equal-sized raised dots, does not correspond with the passage "serie triplici (punctorum), quarum intermedia minor est." The *C. tuberculare* of our shores possesses the ascribed characteristics; I dare not, however, assert it to have been the *Trochus punctatus* of Linnæus, although the locality (for it is found, also, in the South of Europe) likewise coincides, since Philippi, in the 'Zeitschrift für Malakozoologie' for 1848 (p. 23), has



bestowed the Linnean appellation upon a *Cerithium* which he regards as the species of the 'Systema.' The *C. punctatum* of Bruguière was not designed for the Linnean shell.

### ***Trochus striatellus.***

Unfortunately this ambiguous species, whose brief description, unillustrated by references to any engravings, was far too inadequate to enable naturalists to determine the intended shell, was not possessed by our author. Attentive perusal of the diagnosis, however, impresses one with the idea of its having been either a *Chemnitzia* or a small *Cerithium*. Although the paucity of the indicated characteristics leaves ample range for conjecture, Chemnitz has not noticed the species; nor have Gmelin, Schröter and Dillwyn added aught to the original description. Bruguière, alone, has ventured to refer it with doubt to the *Cerithium zonale*, with which one of the very few characters mentioned, "alba, apice violacea," is discordant. As no certain identification can ever be ensured, it is far better to wholly omit the name from our catalogues.

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## **T U R B O .**

### ***Turbo obtusatus.***

Many writers have imagined that this and the *Neritoides* of authors (not of Linnæus) were but varieties of the same shell. The supposition is erroneous, as the marked specimen (Chemn. Conch. Cab. vol. v. pl. 185, f. 1854, Nos. 3, 4, 5, probably) in the Linnean cabinet is a very distinct species, and very nearly approaches the *Littorina* ordinarily recognised as the *Turbo obtusatus* of Lamarek's 'Animaux:' all the examples present,

however, are of an uniform tint, so that the Lamarckian expression “*alba castaneo bizonata*” is not at all appropriate to them. I have consequently deemed it advisable both to describe and to figure (pl. 3, f. 6) the original specimens.

Shell small, obliquely subglobose, depressed, not peculiarly solid, of an uniform reddish fulvous hue, very delicately sculptured, except in aged shells, which seem almost smooth, by close-set spiral raised striæ, which, when highly magnified, appear decussated by most minute and very obliquely concentric striulæ. Volutions four, very convex: body-whorl not occupying more than five-eighths of the length, retuse beneath the very distinct suture, which is much arcuated, yet but slightly oblique, somewhat attenuated anteriorly; spire acute. Aperture large, expanded, obovate, decidedly longer than broad; throat of the adult often stained with purple; outer lip forming an acute angle with the body, sharp at the edge; pillar lip very broad, concave, usually pale or whitish. Length two-fifths of an inch; breadth full half an inch.

### **Turbo Neritoides.**

Linnæus having referred us to a rude figure in Gualtier (45, F) of the *Littorina cærulescens* of Lamarck, which is not at variance with his brief and unsatisfactory description, Philippi rightly adjudged that the name *Neritoides* should be ascribed to that widely-diffused shell. The Linnean cabinet confirms the correctness of his views, for of its entire contents that species (Payraud. Moll. Corse, pl. 5, f. 19, 20, *L. Basterotii*) will alone agree with the pictorial and descriptive definitions.

### **Turbo littoreus.**

From the correctness of the synonymy no difficulty has ever been experienced in the determination of this species. The *Littorina vulgaris*, our common periwinkle (Chemn. Conch. Cab. vol. v. pl. 185, f. 1852, Nos. 1, 2, 3) is present in the typical collection, and alone agrees with both the pictorial and the

descriptive definitions. The words "quum ostendit sese" have been written in the revised 'Systema' after the passage "indicat ventum a terra pacatum ad littus."

### **Turbo muricatus.**

The *Littorina muricata* of authors (Born, Test. Mus. Vind. pl. 12, f. 15, 16) remains in the marked receptacle of this shell in the Linnean cabinet. A single fair delineation of the intended species, which harmonised with the exact, yet meagre description, having been alone referred to, rendered the identification both early and easy.

### **Turbo cimex.**

As too frequently is the case, this little species, which appeared originally with a single and consistent reference, was rendered ambiguous by the additional synonymy of the twelfth edition. The figure of Adanson must consequently be rejected, since it represents a different shell from the cited *Rissoa* delineated by Gualtier. Our author having indicated his possession of the *Turbo cimex*, search was made in his cabinet, for the shell generally regarded by Montagu and the English conchologists as the veritable species of Linnæus. This was not to be discovered, but a large parcel of the *Rissoa calathiscus* (Philippi, Moll. Sicil. vol. ii. p. 125; *R. granulata*, vol. i. p. 153) was found enveloped in a leaf torn from some Swedish book, and as these shells perfectly answer to the description, and none other in the collection correspond with the definitions, no reasonable doubt can be entertained of their typical authority. Moreover, Mörch, in one of his critical catalogues (Yoldi) has suggested the probability of this synonym.

### **Turbo pullus.**

Notwithstanding that the absence of synonyms and of descriptive detail would seem to render the identification of this

minute species an almost hopeless task, the locality, being taken as a limiting characteristic, has accomplished it. For the richly variegated colouring, minuteness of size, form of the mouth, and perfect smoothness of surface, are features combined in so few Mediterranean shells (the expression "*ovata*" discriminates it from *Vieuxii*, &c.) that almost universal assent points to the *Phasianella pullus* of authors as its representative. Many specimens of this shell (Donov. Brit. Shells, vol. i. pl. 2, f. 2 to 6) are still preserved in the Linnean cabinet, where no other objects (and its presence therein has been recorded) equally suit the entire definition.

### ***Turbo personatus.***

The cited drawing of Rumphius undoubtedly represents the *Turbo variabilis* of Reeve (Conch. Syst. vol. ii.), and if that beautiful species, so closely allied to, and so habitually confused with, *T. petholatus* as to render it unlikely that our author would discern more than varietal distinctions between them, will correspond in characteristics with the few features specified in the original description, no hesitation need be felt in admitting its identity with the species under consideration. Mörch, in referring to *personatus* "Gualt. t. 64, T" (as the *tania* of Meuschen) intends, I presume, the same *Turbo*, and is satisfied with this identification, to which, provided we limit it to the 'Systema' solely, I am disposed to assent. From the expression "*convexa*," indeed, one might have expected a somewhat more depressed form; it must be recollected, however, that its shape is so when compared with the contour of the adjacent congeners.

What the species of the 'Museum' was I am at a loss to conjecture. It is described as no larger than a filberd-nut, having the aspect of a *Nerite*, dotted with blackish brown upon an ash-coloured ground, and with a pearly aperture. Can it have been some such shell as the *Trochus* (!) *crassus* (Donov. Brit. Shells, vol. ii. pl. 71), of which one or more specimens may be described in our author's cabinet? The *Turbo variabilis* is not present in the collection.

## **Turbo petholatus.**

The Linnean specimen (Chemn. Conch. Cab. vol. v. pl. 184, f. 1836) marked for this species is the subangulated form of the *Turbo petholatus* of modern writers. The engravings referred to in the synonymy were not especially accurate, yet, coupled with the details of the 'Museum Ulricæ,' they sufficed to establish a correct identification. Figures 24, 25, 28 must be erased from those enumerated as representing the shell in Seba's gigantic folio. "List. 584, f. 39" is quoted by our author in his own copy of the 'Systema.'

## **Turbo cochlus.**

Although the description of this shell is very short, none of the species in the Linnean cabinet exhibit the required combination of characteristics. Born and Chemnitz have selected very different *Turbines* as the representatives of this doubtful species, whose ill-assorted synonymy has proved a stumbling-block to conchologists. The smooth *Turbo cochlus* of Chemnitz (Conch. Cab. vol. v. pl. 182, f. 1805, 1806) bears not the slightest resemblance to *T. argyrostomus*; hence it cannot be the striated Linnean one which is declared to resemble that coarsely ribbed shell. The erroneous references to Lister (erased by Linnæus in his revised copy) and to Regenfuss (whose outer figure 12, however, clearly represents *marmoratus*) were doubtlessly the source of the false identification. The remaining synonyms indicate two species at the least: Seba, pl. 74, f. 6, being the Lamarckian spinous form of *T. argyrostomus*—to which, possibly, the irrecongnisable uncoated *Turbo* delineated by Argenville may belong—Seba, pl. 74, f. 20, 21, and Rumphius, pl. 19, f. 4, being apparently the *T. margaritaceus* (as delineated by Chemnitz, figure 1762). These two last were also quoted by Born for his narrow-ribbed *cochlus*, which, from his synonymy, weeded by his description, seems not unlikely to have been the Chemnitzian *margaritaceus*.

Since the *T. argyrostomus* is a decidedly umbilicated species, it cannot be the imperforated Linnean *cochlus*. Born's selection, then, does not appear unreasonable, for adult examples of *margaritaceus* are almost imperforated. I confess, however, that to me at least the *Turbo cochlus* seems so inadequately defined as to be indeterminable. For, although it would not be difficult to indicate a species (the *T. crassus* of Wood's Supplement to the 'Index Testaceologicus,' pl. 6, Tur. f. 43, for instance) in which are displayed the few features required by the very concise diagnosis, it would be unjustifiable to attempt an identification upon such slender grounds of evidence.

### ***Turbo chrysostomus.***

The admirable description in the 'Museum Ulricæ,' and the cited figures of Rumphius, Argenville, Klein and Seba (that of Gualtier is more doubtful), so evidently pointed to the shell which long before the days of Linnæus had borne the equivalent appellation of "os aureum," that its recognition (*Turbo chrysostoma*, Reeve, Conch. Icon. vol. iv. Tur. pl. 7, f. 28) has long been unquestioned. There are specimens of it in the Linnean cabinet, but not in good condition.

### ***Turbo tectum-Persicum.***

The cited figure of Argenville represents a depressed-conical sharply-spined *Trochus* of the *Imperator* section, which by no means suits the "ovata" "spinis obtusis" of the meagre description in the 'Systema;' hence the species not having been defined in the tenth edition, accordance with the language of the 'Museum Ulricæ,' not resemblance to the cited engraving, must be the criterion of identity. The "faux minime argentea" of that publication excludes altogether the idea of a *Trochus*, since all the true members of that vast genus exhibit a nacreous aperture. Born's recognition was, therefore, inaccurate: his figure, moreover, bears no resemblance to that of Argenville.

The *Littorina* (*Monodonta*) *tectum-Persicum* of authors (Geuens, Conch. Cab. pl. 9, f. 66, tolerably) alone of the contents of the Linnean cabinet harmonises with the diagnosis, and, as its presence in the collection was expressly asserted, and tradition favours the recognition, may fairly be presumed the representative of the Linnean species. Even at this late period (1846) I know of no characteristic representation of it, and in the absence of such (for only a doubtful likeness by Gualtier was then extant) the erroneous citation of Argenville was not surprising.

### ***Turbo pagodus.***

The *Monodonta* (*Littorina*) *pagodus* of Lamarek (Chemn. Conch. Cab. vol. v. pl. 163, f. 1541, 1542) still remains in the marked receptacle of this species in the Linnean cabinet, and accurately corresponds with its synonymy and description in both the 'Systema' and the 'Museum Ulricæ.' The harmony of the references with both the text and each other caused the early recognition of this well-known shell.

### ***Turbo calcar.***

In the earlier copies of Lister's 'Historiæ' no regular series of numerals was attached to the engravings. Hence it became difficult to clearly quote them, and the omission in the 'Systema' of the chapter referred to (4, s. 6. t. 1, f. 3, 4, instead of 4, s. 6, c. 6, t. 1, f. 3, 4) rendered it less easy to discover its modern equivalent pl. 608, f. 46, on which is depicted the *Trochus stella* of Lamarek's 'Animaux.' The same shell has been represented by Klein and Rumphius, and likewise by Argenville, as cited originally in the tenth edition (9, f. R). The description in the 'Museum Ulricæ' is so clearly demonstrative, that, even without consulting our author's collection, I could not but have assented to the conclusion of Deshayes, that the *T. stella* must resume its prior appellation of *calcar*. The preservation of marked specimens of that shell (Chemn.

Conch. Cab. vol. v. pl. 164, f. 1552, 1553, lower figures) in the Linnean cabinet sanctions the idea, and, although the numerals have been partially erased, their mere presence proves the typical nature of the examples, which, since they do not correspond with the published characteristics of any other shell in the 'Systema,' but answer fairly to the early definition of *calcar*, may not unreasonably be supposed the original types of this species.

An important change occurred in the last edition of the 'Systema,' evidently intended for the purpose of including the *Trochus solaris*, *Indiæ occidentalis* of Chemnitz (*T. longispina*? Lamarek), of which Linnæus possessed a specimen; for the reference to a representation of that shell in Argenville (plate 11, f. H), has been substituted for the earlier citation (pl. 9, f. R), and the previous "imperforata," modified by a "sub" preceding it. The "subtus scabri punctis eminentibus" of the 'Museum' will not, however, apply to that magnificent shell, which may, nevertheless, with some reason, be considered the *calcar* of the twelfth edition.

### **Turbo rugosus.**

A marked but aged example (Chemnitz, Conch. Cab. vol. v. f. 1782 to 1785, for species not specimens) of the *Turbo rugosus* of authors, confirms the accuracy of a recognition established rather upon the words "columellæ labro purpureo," a most unusual feature, than upon the exactness of the synonymy. For the shell represented by Seba looks more like *cidaris*, and the cited engravings of Bonanni and Gualtier, if intended for *rugosus*, are far from characteristic of that species.

In the revised copy a reference to Lister "647" has been added, which figure gives a better idea of the species intended. The worn state of the original example was probably the source of the incorrectness of the synonymy.



### **Turbo marmoratus.**

Owing to the shallowness of the drawers in the Linnean cabinet, the great shell (*Turbo marmoratus*, Reeve, Conch. Icon. Tur. pl. 1, f. 2) marked for this species in the collection was not placed there with the rest of the *Turbines*, but was found apart. Thanks to the details of the 'Museum Ulricæ,' and the figures of Seba, Gualtier, Rumphius and Klein, the species was easily recognised as the *Turbo marmoratus* represented by Chemnitz (vol. v. pl. 179, f. 1775, 1776). The cited engraving of Regenfuss has also been ascribed to this species by Lamarck and others; it represents an allied shell, which Deshayes has separated by the name of *T. Regenfussii*. In his interleaved copy of the tenth edition of the 'Systema' our author has thus written: "Magna, ponderosa, virens, ventre obsolete tricarinato-nodoso. Intus argentea, postice diducta in labrellum concavum. Operculum convexum, læve, album, testace(um)."

### **Turbo Sarmaticus.**

Our author did not possess this species, and has not added anything to his very brief account of it. A meagre description (of two lines), and the solitary reference to Argenville (plate 11, f. B) were the sources from whence Chemnitz has effected his identification of the Linnean species (Conch. Cab. vol. v. pl. 179, f. 1777, 1778, and pl. 180, f. 1781). It is the *Turbo Sarmaticus* of almost all writers upon conchology.

### **Turbo olearius.**

There is no manuscript addition to the published account of this shell, which is not indicated as having been in our author's possession. It could not be expected that, as from his own confession the species was only known to him in an uncoated condition, the synonymy would be very accurate.

Accordingly we find the reference to Argenville (pl. 20, f. B) is decidedly an error, for that engraving represents an *Ampullaria*, a genus whose aperture would exclude it from the *Turbines* of the 'Systema.' I think from the expression "easque maximas, solidissimasque" that Gualtier's figure should be regarded as the typical one; the others, although probably designed for allied species, are by no means so characteristic.

Chemnitz has figured in his 'Conchylien Cabinet' (vol. v. pl. 178, f. 1771, 1772) a shell which he considers to be the natural state of *Turbo olearius*, and this recognition has been generally accepted. Deshayes regards it as an advanced state of *T. marmoratus*.

### ***Turbo pica.***

The *Turbo pica* (Chemn. Conch. Cab. vol. v. pl. 176, f. 1750, 1751) of authors is marked for this species in the Linnean collection. It would have been strange if the shell had not been recognised, since seven of the eight synonyms are correct, and the peculiarly striking features of the object itself rendered it unlikely to escape attention or to be confounded with any other. The reference to Rumphius must be erased; this engraving had been previously and correctly cited by our author for *Trochus Niloticus*. Linnæus has added in his own copy of the 'Systema' "Acta Paris. 1766, p. 528, t. 15, f. 1, veuve." The assigned locality is incorrect.

### ***Turbo sanguineus.***

In the entire Linnean collection I find only a single species (*T. coccineus*, Desh. Exp. Morée, Moll. pl. 19, f. 6, 7, 8) that will agree with the description of this shell; hence, as our author has stated his possession of an example, I entertain no doubt of the typical authority of the specimen. It is the *Turbo* which, having been already identified by Philippi, has been thus named by him in his 'Enumeratio Molluscorum Siciliæ' (vol. i. p. 179; vol. ii. p. 151).

## ***Turbo argyrostomus.***

Of this shell there are several marked examples in the Linnean cabinet (*Turbo margaritaceus*, Reeve, Conch. Icon. Turbo, f. 29: not of authors) which answer to the description. The synonymy is very inaccurate: the engravings of Rumphius and of Gualtier, the former of which looks almost like the *T. radiatus* of Lamarck, alone approach the described features. Argenville's drawing exhibits an imperforated! shell; Lister's has elsewhere been quoted by Linnæus for *T. cochlus*, and represents that species as understood by Chemnitz; Regenfuss has admirably depicted the next species, to which, indeed, as Linnæus has remarked, it bears a close affinity. One cannot wonder, then, that this *Turbo* was not correctly identified by Lamarck, who has taken the *Argyrostomus spinosus* of Chemnitz for it, although no mention was made, even among the fuller details in the 'Museum Ulricæ,' of the peculiar spinous scales, which characterise that shell, and Seba, whose figure had been previously quoted for *cochlus*,! alone of the many authors referred to has depicted it.

Philippi, in the 'Zeitschrift für Malakozöologie' (1846, p. 134), has already remarked the erroneous acceptance of the *Argyrostomus spinosus*, which he terms *T. princeps*, for the Linnean species. Judging from his reference to Geve (Conch. pl. 16, f. 153, 154), combined with his description, he seems to have correctly divined the species of Linnæus.

## ***Turbo margaritaceus.***

The synonymy of this shell is equally incongruous with that of the last, so that it is surprising that naturalists have truly determined the species intended by the great Systematist; the presence, however, of a marked specimen (*Turbo margaritaceus*, Chemn. Conch. Cab. vol. v. pl. 177, f. 1762) in the Linnean cabinet proves their discernment. Not a single engraving of those referred to exhibits the species, or harmonises

properly with the description. The expression “lineis dorsalibus lævibus” excludes both Bonanni’s nodulous shell and Seba’s young *marmoratus* (or some allied congener): Argenville’s figure of *setosus*, also, must be rejected, as that *Turbo* is not umbilicated. As to Rumphius, his engraving (pl. 19, f. 3) having been likewise quoted by our author for the preceding species, its value as a pictorial definition is destroyed: it was probably a typographical error for pl. 9, f. 4, which drawing bears more resemblance to the object intended. The same numeral (4) was probably meant in the reference to Seba’s plate, for that drawing is generally cited in illustration of *marginatus*. The reference to Regenfuss in the synonymy of *argyrostomus* was not improbably misplaced by accident, since it evidently belongs here.

### **Turbo delphinus.**

Of the many known *Delphinulæ* proper (of which genus this *Turbo* was undoubtedly a member) whose distinctions, formerly held of only varietal, are now more justly esteemed of specific importance, two only, the *laciniata* (Reeve, Conch. Icon. 1. Delp. p. 2, f. 9) and *atrata*, are present in the Linnean cabinet. Since our author possessed the species, and the latter is correctly marked for another shell, one cannot but conclude that the former was the type of his *T. delphinus*. Linnæus, as usual in citing Seba (whose work was not in his own library), has quoted the wrong plate; 58 being filled with *Nerites* (in the Linnean sense); 59 with *Delphinulæ*. Of the 27 figures mentioned, Nos. 3, 4, 5, 6, must be excepted, being *Trochi*, and No. 1 (*Del. sphærule*) from not exhibiting the “spinis ramosis” of the description.

### **Turbo distortus.**

The *Delphinula atrata* (Reeve, Conch. Syst. vol. ii. pl. 212, f. 12) is marked in the Linnean cabinet for this shell, agrees with its description, and admirably suits the illustrative

engraving in Gualtier. The synonym of Lister (transferred in our author's manuscript to the preceding species), though, in all probability, not designed for it, bears likewise a general resemblance to the Linnean *distortus*.

### **Turbo crenellus.**

Neither Schröter nor Dillwyn have added any particulars to the original description of this hitherto unrecognised species, and Gmelin furnishes us merely with a slight transposition and abridgment of it. In this they acted wisely, for any attempt at identifying an object so very imperfectly defined (an inadequate description and no auxiliary synonym) must have been guess-work. Consequently, however interesting it may be to ascertain what our author intended, the name *crenellus* cannot be preserved, since it was utterly impossible for any one to recognise the species by his publications. By a process of analysis, there being luckily but one shell in the entire collection of Linnæus which coincides exactly with the diagnosis, the *Solarium Chemnitzii* of Kiener (Coq. Viv. Sol. pl. 4, f. 8) was found to have been the primitive type of the species. It is not surprising that no figure of it has been cited by Linnæus, since the only one extant at that period was a not particularly excellent one by Lister, whose work, from the imperfection of his own copy, he was oftentimes compelled (as he has informed us) to quote from its observation by others. It must be remarked, that in the description of *Turbo crenellus* (as in that of *T. argyrostomus* and many other spirally-coiled univalves) the word longitudinal has not its modern signification of running from top to bottom or parallel to the axis, but running in whichever direction (length or breadth) the space between which is the greater. The meaning of the word consequently varies with the shape of the shell.

### **Turbo thermalis.**

As is usually the case with the smaller shells mentioned by Linnæus, his immediate followers have been unable to identify

this little species. Chemnitz has omitted it; Gmelin has merely transcribed its diagnosis; Schröter has rested content with noting the incongruity of locating a smooth shell in a cancellated section. Dillwyn, with some reason, suspected that it was identical with the *Valvata piscinalis*, but the contour of that shell is orbicular-conic, this is said to be "oblongiuscula." Philippi, on the contrary, believes it (Moll. Sicil.) to be the same with his *Paludina muriatica*,—of which he regards the *P. (Cyclostoma) acuta* of Draparnaud to be a synonym,—principally because of its having been found in warm baths; the expression of our author, however, was not "In thermis," but "prope Thermas Pisanas," and the "apertura orbicularis" of the 'Systema' is too much at variance with the "apertura ovata, superne distincte angulata" of the German naturalist to be passed over. For a like reason the identification of the shell by Potiez and Michaud (*Palud. thermalis*, Gal. Douai, Mol. i. pl. 26, f. 29) cannot be assented to.

A rather important aid seemed promised us by a manuscript reference of our author to "Vandel. Patav. p. 115, pl. 3, f. 1;" the engraving, however, is far from good, yet reminds us of *Bithinia ventricosa* and of Draparnaud's drawing of *Paludina similis* (considered by many as the same species). Our native *Bithinia*, indeed, approaches the description very closely, but no sound identification (so far, at least, as to affect the name) can ever be based upon the mere accordance of a shell with a brief diagnosis and an unpublished reference to a rude engraving. We learn from the text which accompanies the above-mentioned figure, that the shell delineated was only as large as a grain of millet, twice as long as broad, bluish white, composed of four volutions, the last-formed of which was decidedly big, the two preceding nearly equal in size to each other, and the apical turn abruptly diminished to an acute point: the aperture (represented in the engraving as occupying two-fifths of the total length) is stated to be a segment of more than half a circle. No shell which answers to this description can be found in the Linnean cabinet, and in truth the account of the aperture scarcely allows us to imagine that the object thus described, although in general look and local peculiarity it resembled *thermalis*, was really the shell intended by Linnæus. The reference, however, to Vandel, so far defines the species,

that, if we should succeed in finding a Paduan shell which, whilst undoubtedly that spoken of in his work, should answer likewise to the Linnean diagnosis, we may fairly presume it to be this puzzling *Turbo*. Whatever that species may prove, its genus will undoubtedly be *Paludina* in its extended Lamarckian signification.

### ***Turbo scalaris.***

Thanks to the description and the adequate, though rude, figures quoted by Linnæus (who did not himself possess the then costly species), no difficulty has ever been experienced in recognising this beautiful shell, the *Scalaria pretiosa* of modern conchology (Crouch, *Introd. Conch.* pl. 16, f. 11). “Ad Tranquebar” follows the “Habitat” in the Linnean copy of the ‘Systema.’

### ***Turbo clathrus.***

Under this appellation our author has manifestly confused two *Scalariæ*, the *communis* and the *lamellosa* of Sowerby's Monograph (*Thes. Conch.* vol. i.); both these were found mixed together in one box in the Linnean cabinet. Should we abide by the synonymy of the tenth edition (for the diagnosis, from its extreme brevity, might comprehend half the known members of the genus) we should find that four out of the seven references, Klein, Lister, Bonanni, and the ‘Fauna Suecica,’ incontestably indicate the former; and Plancus was probably intended for the same. Rumphius is uncertain: and one only of the two cited figures in Gualtier exhibits any approach to the characteristic carina of *lamellosa*. We may fairly, then, regard *communis* as the *clathrus* of the tenth edition. Although the primitive synonymy is retained in the twelfth edition of the ‘Systema,’ the *S. lamellosa*, on the contrary, was there designed, as the “in infimo anfractu versus basin convexa, mediante carinula” clearly evidences. In the ‘Museum Ulricæ’ both are separately specified as varieties with and without a keel. Lamarck can scarcely be censured, then, for not having preserved the name

*clathrus*; for it is still difficult to pronounce upon the advisability of its resuscitation.

### **Turbo ambiguus.**

The epithet *ambiguus* may either relate to doubts of its generic allocation, or, more probably, of its essential individuality. It may be presumed, from the “*simillima clathro*” of the description, that this shell belonged to the genus *Scalaria*, but to what species it should be referred is still uncertain. Nothing in the cabinet of our author corresponds satisfactorily with the features he has attributed to it, and no manuscript addition has been bequeathed to us by him, so as to further elucidate the matter. Unaided by any pictorial synonymy, it could not be expected that naturalists should have indisputably recognised an object so briefly defined. Gmelin has merely transposed and abridged the original words; Schröter described, yet did not figure his ideal; Dillwyn was unable to increase our knowledge of it. Karsten has considered that figures 1435, 6 of the fourth volume of Chemnitz represent it; a conclusion not borne out by either his own description or the cited drawings. In the ‘Synopsis’ of Menke mention is made of the *Scalaria ambigua* of Linnæus; but as no details are given we are not much enlightened thereby: in the recent Monograph of *Scalaria* by Sowerby the species is passed over in silence. Yet the recorded features “2 seu 3 lineis ferrugineis secundum anfractus pictis: basi umbilicata,” and 30 ribs, as we learn from the contrast of it to *clathrus* in the concluding paragraph of the preceding species, are not of ordinary combination in that genus; so that it is not impossible that some member of that genus may be found that will precisely and exclusively agree with the Linnean description. The *S. lincolata* of the ‘Thesaurus’ fairly enough agrees with the specified features, and the *S. lyra* of the same work has already been proposed (despite of the expressions “*turrita*” and “*simillima clathro*”) as its representative: neither of the two, however, have been discovered in the Mediterranean (the stated locality); so that such an identification would savour too much of conjecture to be recommended.



### **Turbo crenatus.**

Although no reference to a figure accompanied the description of this shell, the details in the 'Museum Ulricæ' left no doubt that it belonged to the genus *Scalaria*. Although Chemnitz was somewhat bold in venturing to positively identify a shell (Conch. Cab. vol. xi. f. 1880, 1881) for whose recognition the data were so few, he was nevertheless right in his conclusion. The analytical process so often alluded to proves that the *Scalaria crenata* (Sowerby, Thes. Conch. Sclar. f. 123) is the representative of the *Turbo crenatus* in the Linnean cabinet, for alone of the entire collection it correctly harmonises with the recorded features.

### **Turbo lacteus.**

This is another of the smaller species which the old school of conchologists have failed to recognise. From the expression "*T. clathro similis*" one is led to expect either an absolute *Scalaria* or a shell with those longitudinal ridges which constitute so generally diffused a feature in that graceful genus. It has not, however, been identified with a *Scalaria* either in the Monographs by Kiener and Sowerby, or in any work I am acquainted with, nor can I find any *wentle-trap* in the cabinet of our author (who, nevertheless, has indicated his possession of it) that will answer to its description. The cited figure of Ginanni is a very obscure one, and must be looked upon as a mere approximation to the shell intended: it is a dorsal view of either a beakless *Cerithium* (*C. lima*?? or *mamillatum*??) or a *Turritella*; the text of that work merely informs us that it was minute and reticulated. "Minor grani hordei striis elevatis nec tamen membranaceis" strongly favours the idea that the Linnean species belonged to *Chemnitzia*, of which a member, the *elegantissima* (Philippi, Moll. Sicil. vol. i. pl. 9, f. 5) is still present in the collection, and accords better than any other example there with the described features. I would not, on such grounds, argue for a substitution of the name *lactea* in

place of that appellation by which it is so generally known, but would merely suggest the citation of the Linnean species with a mark of doubt in our future synonymies of *elegantissima*.

### **Turbo striatulus.**

Much uncertainty has prevailed respecting this species. Gmelin merely transposed and slightly abridged the original description; Chemnitz and Schröter have left it in its pristine obscurity. Regardless of the forbidding "turrita," the English writers (Montagu, Dillwyn, &c.) have selected a short-spined Littoriniiform *Rissoa* for its representative. Philippi has doubtfully cited it for *Chemnitzia elegantissima*, of which the sculpture is too simple to suit the diagnosis.

Should we understand the word "cingulis" in its ordinary modern sense of spiral belts (not as simple belts traversing the volutions in either direction) the position of this shell in the longitudinally ribbed group of *Turbines* would be especially ill chosen: and if we are so to take it, it must be confessed that no shell in the collection of Linnæus (albeit that he has declared its presence therein) will answer to its description. It is certain, however (from its use in the definition of *T. clathrus*) that the expression merely signified a belt-like projection, the inclination, whether horizontal or perpendicular, when not specified, having to be gathered from the context.

A careful and tedious analysis of the cabinet of Linnæus has demonstrated that only one species therein will agree with the described features, and that so perfectly that no reasonable doubt of its being the actual type can be entertained by any unprejudiced mind. It is, as a study of its characteristics in the 'Systema' led me to anticipate, a *Chemnitzia*, and its peculiar varicose sculpture corresponds precisely to the "passimque rugis convexis callosis" of the description. The specimen, of which I cannot find any published delineation, has been engraved in plate 5, figure 8 of the present work. It is the *C. varicosa* of Forbes (*Ægean Moll. in Brit. Assoc. Report*), as I have determined by the comparison of it with a typical example received from the author.

## Turbo uba.

The *Pupa uva* of Pfeiffer's Monograph (Wagn. Suppl. Chemn. Conch. Cab. pl. 235, f. 4122, 4123), alone of the shells in the cabinet of Linnæus, who has recorded his possession of the species, answers to the definition of this common shell. Three out of the four pictorial references have been generally accepted as correctly ascribed to it, and the account in the 'Museum Ulricæ' fairly agrees with the examples; Bonanni's drawing, however, has been quoted by Pfeiffer, as illustrative of his *P. Martiniana*. The *P. mumia* confounded with it by some of the earlier writers is not present in the collection, where the only allied form is the *P. alvearia*, to which the expressions "ovata" and "alba" (M. U.) are not applicable.

## Turbo cornuus.

No chance exists of identifying this ambiguous shell, without the inspection of the original type in the Dronningen Museum: it was probably a *Cyclostoma*, but even that is uncertain. Linnæus did not himself possess it, and, since he has not illustrated his meaning by a reference to an engraving, authors have not succeeded in clearing away the pristine obscurity which involved it. Chemnitz does not notice it; Schröter and Dillwyn did not know it; Gmelin merely changed "testacea" to "fusca," and added "apertura intus alba." Karsten, a not over-skilful conchologist, evidently believed, from the various particulars he has mentioned, that he had recognised the species: unfortunately his unillustrated details are not sufficient for the purposes of definition, and consequently do not elucidate the Linnean shell. His description runs as follows: "umbilicata, ferrugineo alboque undata; anfractus 6 convexi decussatim striati; apertura subovata reflexa; fauce subfusca, extus lacteo annulata. Long. 9 lin. Lat. 6 lin."

### **Turbo reflexus.**

Dillwyn, in his excellent 'Descriptive Catalogue,' has suggested that this doubtful species might prove identical with the well-known *Cyclostoma elegans*, a species so remarkably abundant, and so widely diffused, as to appear very unlikely to have eluded the observation of Linnæus. This conjecture, for the meagre and unillustrated description of the 'Systema' permitted no logical demonstration (hence the more ancient name cannot obtain precedence), is corroborated by the contents (*C. elegans*, Sow. Thes. Conch. Cyclost. f. 32, 33) of the marked receptacle of *Turbo reflexus* in the Linnean cabinet.

### **Turbo Lincina.**

Our author did not possess this shell. All the four cited figures have been ascribed to the same *Cyclostoma*, which has been justly selected by Sowerby, in his late Monograph of that genus, as the representative of the Linnean species (Thes. Conch. i. pl. 28, f. 148, 149). Browne's engraving, indeed, is a characteristic one, and harmonises with the description in the 'Systema;' Sloane's, on the contrary, requires the aid of the accompanying text to be rightly understood.

### **Turbo imbricatus.**

The specimen of this shell, marked as such by the author of the 'Systema,' correctly agrees with the peculiar character assigned to the species in the 'Museum Ulricæ,' "anfractus inferiore latere gibbosiores, inde quasi extra superiorem imbricati." Its presence in the Linnean cabinet is of importance, since, as M. Deshayes justly observes, even the enlarged description in the 'Museum Ulricæ' is not sufficient to enable us to determine its identity with any *known* species. The only permanent reference to a figure was to Gualtier, plate 58, E; which,

although evidently not precisely what our author had before his eyes (for it is said to be “ex albo et roseo variegatus,” and not “grisea”), nevertheless presents the general contour of it. In the tenth edition of the ‘Systema’ “Bonan. Recreat. t. 118” was cited, a figure subsequently and more correctly referred by our author, on the constitution of the *Buccinum subulatum* in his twelfth edition, to that species; for this reference “Seb. Mus. iii. t. 56, f. 32,” was substituted in the last edition, manifestly quoted from the engraving exhibiting some appearance of a margin at the base of the whorls; but neither this nor any other representation of a *Turritella* in the older writers exhibits the peculiar features of the specimen. We have consequently given a representation of the Linnean type (plate 3, fig. 2), by the accurate hand of Mr. Sowerby, junior. Although the shell is by no means a common form of the *Turritella imbricata* of authors (I regard Kiener, pl. 9, f. 2, *a*, as the normal state), I feel tolerably sure that it is only a slender variety of it. Where not wholly bleached—and a coating of dirt has fortunately preserved in patches the pristine colouring—it exhibits the brown, cloudy markings, and even faint traces of the minute articulation which distinguish that species, but almost the entire surface is so blanched (it has turned grayish or squalid white) that the expression “grisea” was not inapplicable to it. There appear to have been about sixteen whorls, of which two or three are now gone, all rather densely girt with delicate raised spiral striæ. The earlier volutions are nearly flat, and much broader below than above; they display a rather coarse subcentral elevated stria, in addition to the somewhat imbricating basal belt, from whence the species derives its appellation. This belt at first appears as a sharply prominent carina; then, as it enlarges upon the lower whorls, it becomes obtuse and swollen. Upon the last two or three volutions a faint spiral prominence arises not far from the profound suture, and the middle portion of the surface becomes slightly retuse. The aperture is too broken to be spoken of with confidence, but, judging from the shortness of the columella and the direction of the lines of growth upon the outer lip, was, in all probability, of a rounded subquadrate form.

## *Turbo replicatus.*

Perhaps the shells which come nearest to the description of our author are certain specimens of the *Turritella brevis* of Lamarck (the *Mesal* of Adanson, pl. 10, f. 7), whose surface may not inaptly be called “*lævis, non glabra*,” and which are so far “*sursum imbricati, margine angusto*” as to have the upper edge of each whorl slightly overlapping that of the preceding one. Of this species, or rather of what we consider only a variety, the *T. varia* of Kiener, there is an example in the collection, and since Linnæus has stated his possession of the shell, it is not impossible that he considered it identical. Yet, since it is neither marked nor contained in the marked trays, I am far from advocating the adoption of the name *replicata*. Moreover, as we find by the first catalogue of his cabinet (attached to the tenth edition of the ‘Systema’), he did not describe the species from his own specimen, for he has not enumerated it among his possessions. I perceive no other shell in the Linnean cabinet which will agree with the expression “*anfractibus sursum imbricatis*,” neither, indeed, have I noted elsewhere a *Turritella* thus characterised (to which genus it appears to belong) that can correctly be termed, in addition, “*lævi*.” The only figure referred to by Linnæus (plate 14, E, of Argenville’s ‘Conchyliologie,’ misprinted Gualtier in the ‘Museum’—for 14 E of that author represents a *Cowry*) exhibits no appearance of imbricated whorls. It represents a worn *Turritella*, the smoothness of whose surface, and the form of whose mouth remind one of *brevialis*; but whose size and elongation forbid the supposition. The only additional information to be gleaned from the ‘Museum Ulricæ’ is that the shell was produced, horn-coloured with paler shades, not glabrous; that the overlapping edge was narrow, and the mouth entire and ovate. It is not surprising, then, that authors with no better data for forming an opinion than a too succinct description, and an irreconisable figure, have not succeeded in determining this species. The majority of them appear to have regarded figure 1412 of the fourth volume of the ‘Conchylien Cabinet’ as a

representation of it, but that shell (which I take for the *T. attenuata* of Reeve) is not delineated as either smooth or imbricated. The “anfractibus medio subangulatis suturis coarctatis,” in Lamarck’s ‘Animaux sans Vertèbres,’ expresses a very different sculpture from that indicated by the Linnean language. His type, according to Kiener, was a worn variety of *duplicata*.

### **Turbo acutangulus.**

A marked specimen (pl. 3, f. 1), which agrees with its description, and doubtlessly, in the eyes of Linnæus, less critical in drawings than are those of the present generation of naturalists, with the cited figures likewise, still remains in the collection. The quoted engraving of Bonanni, however, represents a shell, which, instead of being of the uniform “color cornu” of the description, is adorned with longitudinal streaks; that of Gualtier is much more nearly correct, but not being a portrait, it has been thought advisable to have the type delineated in the present work. The specimen is scarcely the *Turritella acutangula* of Deshayes’s edition of Lamarck, but what we regard as a variety of the following species.

Linnæus appears to have eventually thought so himself, as 643, in addition to the 642, is inscribed upon the shell, and in his manuscript alterations, whilst the other turreted *Turbines* are indicated by references to the tenth edition, this is omitted.

### **Turbo duplicatus.**

From the correctness of the synonymy no discussion has arisen as to what shell Linnæus intended by this epithet. To his own copy of the ‘Systema,’ our author has appended, likewise, “List. 591, f. 59.—Pet. Gaz. 102, f. 20.” each confirmatory of his previous references. His marked specimen, fairly enough represented by Chemnitz (Conch. Cab. vol. iv. pl. 151, f. 1414), is the *Turritella duplicata* of modern writers.

## **Turbo exoletus.**

Some years ago the numerals 561 (the number in the tenth edition of the 'Systema' which corresponds with 644 in the twelfth) were plainly visible upon two specimens of the *Turritella bicingulata* of Lamarck (Kiener, pl. 8, f. 2): at present they are faintly legible upon one alone. Hence Dillwyn, whose *Turbo exoletus* is identical with the shell last mentioned, was not wrong in his determination of the Linnean type.

Notwithstanding the existence of these shells it is not just to alter the specific epithet *bicingulata* on this account (*Turbo cinctus* of Donovan was, however, prior to the Lamareckian name), since the figure of Bonanni (the sole drawing referred to) being in accordance with the short diagnosis, the united pictorial and descriptive characters fully define and illustrate a species, of which we find an excellent representation among the *Turritellæ* of Kiener (*T. exoleta*, pl. 7, fig. 2, *a*). Where the essential features of a species have been adequately indicated by an author, I do not think that even the discovery of his type should disturb a generally accepted recognition; especially in the present case, where "carinis distantibus" cannot be affirmed of the Linnean shells.

## **Turbo terebra.**

Lamarck has accurately divined the Linnean species, for his *Turritella terebra* corresponds very fairly with the specimen marked as such by the hand of our author, which has been characteristically enough portrayed as *Turbo Archimedis* in Mawe's 'Introduction to the Linnean System of Conchology,' plate 28, f. 3. Making due allowances for the imperfection of the earlier drawings of natural-historical subjects, the figures referred to in the tenth edition of the 'Systema' are tolerably expressive of the shell intended. Those of Bonanni and Gualtier are the most characteristic, those of Argenville and Rumphius were probably meant for it likewise; Columna's



engraving, however, is too rude a delineation to pronounce upon.

From the locality appended (Europe) it seems that our author regarded the *Turritella communis* of Philippi (the *T. terebra* of the earlier writers upon British Testacea; *T. Linnei* of Deshayes, and perhaps, judging from Kiener's figure, *T. cornea* of Lamarck) as either the young, or a depauperated condition of this fine species. Indeed, Linnæus had published his description of that shell even prior to his establishment of the present species; but the first edition of the 'Fauna Suecica,' wherein it had appeared, had no specific names attached, and independently of the European shell not strictly agreeing with the "carinis sex acutis," the reference to the unnamed *Turbo* of the 'Fauna' formed but one-sixth of the total synonymy.

As M. Deshayes has justly observed, the figure of Adanson (Voy. Senegal, pl. 10, f. 6) only introduced in the twelfth edition of the 'Systema,' must be excluded. He has founded upon it his *Turritella ligar*, uniting the local African name of the species to the Latin appellation of the genus to which it belongs. I cannot but regret that so profound a naturalist as that gentleman has proved himself to be, should so frequently adopt the barbaric names of Adanson, oftentimes, too, in preference to the more classical ones proposed by other writers.

### ***Turbo variegatus.***

Our author having selected for his *Turbo imbricatus* that form of *Turritella imbricata* which has the basal belt of its volutions more particularly developed, has established the variety, wherein the imbrication is almost obsolete, and the colouring peculiarly rich, as a separate species. By the delineation (plate iii. fig. 3) of the Linnean type, I enable others to form their own opinion upon the subject (for the *Turritella imbricata* runs closely into some allied congeners); for myself, I feel no doubt upon the identification, as I have compared a long suite of individuals with the engraved example.

The cited figures of Seba (Mus. vol. iii. pl. 56, f. 26, 34, 31, 33) fairly enough represent the shell (26 has been, however, regarded

by Kiener as intended for the *T. goniosstoma* of Valenciennes), and, strange to relate, although the identity of *variegatus* and *imbricatus* has not been recognised and scarcely even suspected, have constantly been quoted for the latter. Bonanni's engraving is most wretched, yet its general aspect is not so unlike certain individuals of this very variable species. "List. 593" has been added to the references in the revised copy of the 'Systema.'

### ***Turbo unguis.***

The *Turritella fuscata* of Lamarck (Kiener, Coq. Viv. pl. 3, f. 2) is distinctly marked in the Linnean cabinet for this species, and agrees likewise with the diagnosis. Moreover, plate 590 of Lister's 'Historiæ Conchyliorum' has been quoted as illustrative in the Linnean copy of the 'Systema,' and, if not the species itself, bears a marvellous resemblance to it. As far as I can judge from Karsten's meagre description, he appears to have anticipated this identification in his 'Museum Leskeanum.' It is rather surprising that Lamarck did not illustrate his *fuscata* (which, until of late years, was somewhat ambiguous) by a reference to Knorr (Délices des Yeux, pt. 6, pl. 25, f. 3), whose painting was by no means uncharacteristic.

### ***Turbo annulatus.***

No light is thrown upon this uncertain species by either the cabinet or the manuscripts of our author, who has omitted all mention of it in the catalogue of the contents of his museum. The brief diagnosis in the 'Systema' merely informs us that this shell is turreted, and has its suture prominent and marginated, a description sufficiently indefinite to be applied with equal probability to at least half-a-dozen shells. As the rude drawing of Gualtier (pl. 58, f. L.), the sole engraving referred to, bears some general resemblance to the *Melania Helvetica* of Michelin (Magazin de Zoolog. Moll. vol. i. pl. 37. — *Pyrgula annulata* of Cristofori and Jan.), the latter has been conjectured to be identical with this *Turbo*; but unfortunately for this

hypothesis, the carina on the whorls of the *Melania* is nearly central, whereas the characteristic of the Linnean species is the being keeled or margined at the suture. Nevertheless, it is expedient to refer the latter, though with a note of interrogation appended, to that shell, for there is reason to believe that the Linnean account was wholly derived from Gualtier's engraving.

### **Turbo bidens.**

From the language and synonymy of the 'Systema,' no doubt seems ever to have been entertained as to the modern generic location of the *Turbo bidens*: universal opinion points to *Clausilia*. Of that genus I found three or four species in the collection (some possibly added since), of which one alone agrees with the expression "sutura subcrenata." As the catalogue proves that our author possessed the described shell, it is this individual, which alone of the contents of his cabinet accords with the description, that should be regarded as the type. It has been fairly represented in Rossmässler's 'Iconographie' (pt. 3, pl. 12, f. 169, 170), and is the *Cl. papillaris* of modern writers.

Of the cited figures that of Bonanni is the preferable; and, when its details are corrected by the description, is sufficiently illustrative to have been referred to in an age when the general effect, and not a careful attention to specific character, was alone expected from the engraver. Gualtier's drawing (pl. 4, f. c) exhibits only a single horn-like plica, and must certainly be omitted from any future synonymy.

### **Turbo perversus.**

One shell alone in the entire collection of Linnæus, who has recorded his possession of the species, aptly corresponds with his description. This specimen is the *Balea perversa* of Gray's 'Manual of the Land and Freshwater Shells of the British Islands' (f. 70), as had already been divined by the writers upon British conchology. Their correct determination of the

species resulted, in all probability, from a perusal of the language of the 'Fauna Suecica;' for the cited figure of Lister (Anim. Angliæ, pl. 2, f. 11) is too ill executed to aid an identification; indeed, it would rather have led them astray, for it is engraved as dextral instead of sinistral. In the manuscript of the younger Linné I find a reference to plate 41, f. 39 of Lister's 'Historiæ Conchyliorum,' which, although not intended to represent a *Balea* (it has been quoted for *Clausilia nigricans* by Dillwyn), nevertheless approaches it in general features.

### **Turbo muscorum.**

This shell (Plate IV. f. 6) still remains in the collection, is enclosed in a paper inscribed by the hand of Linnæus, and is the sole species in the entire cabinet which at all agrees with the diagnosis. It is a curious edentulous variety of the *Pupa marginata* of Draparnaud, to which species it had been assigned by Nilsson, in his valuable treatise upon the land and fresh-water shells of Sweden, a work especially illustrative of the *Helices* and *Turpines* of the 'Fauna Suecica.' From a sentence in the last-mentioned work "apertura ovato-acuminata, mucrone obtuso" we are led to imagine that our author was aware of the frequent presence of a denticle in the mouth of the shell, although in the 'Systema' he has termed it edentulous. None of the Linnean examples, however, are provided with a tooth; yet in England, where this *Pupa* is most abundant, it is rarely that we obtain an example which is not thus furnished.

### **Turbo auriscalpium.**

When two or three very small species succeed each other, in the arrangement of the 'Systema,' they are generally found in the cabinet of our author wrapt up in the same paper, or enclosed in the same little box. I consequently remarked along with No. 650 a specimen, which, upon comparison with the several diagnoses, agreed with *Turbo auriscalpium* alone; neither could the most diligent search discover any other shell

in the collection which would equally harmonise with the various characters assigned to it. The worn state of this individual accounted for the otherwise puzzling expression "lævis-sima" having been applied to a shell, whose surface in perfectly fresh examples is not inelegantly sculptured. It must be remembered that our forefathers were contented with such *Testacea* as the sea washed upon the shore, which were generally dead and worn, and that the use of the dredge, as applied to the acquisition of objects for natural-historical observation, is a comparatively recent innovation. Hence the rubbed and (in a pecuniary sense of the word) worthless specimens belonging to a retired veteran in conchology, or the cheap lots (the *reje-menta* of a shell sale), the first purchase of some youthful and not over-critical tyro, are often more serviceable for the determination of the species of the older writers, than are the exquisitely perfect examples which now grace the cabinets of the wealthy amateur.

Dr. Philippi has stated his belief—a decision arrived at solely from a careful perusal of the language of our author—that the *Turbo auriscalpium* was identical with the *Rissoa*, subsequently termed *acuta* by Desmarest (Bulletin Soc. Philomat. 1814, pl. 1, f. 4). The Linnean type confirms the opinion of the talented German, as it corresponds exactly with the named individual he forwarded to me. The graphic description in the 'Systema' of the peculiar mouth which characterises the shell is a great assistance for the determination of the species, and the queried reference to Argenville (Conch. pl. 32, f. 19) was not without its utility, since, although from the accompanying text it is ascertained to be a land shell (a *Clausilia*), the general shape, the size, and the apparently projecting and thickened lip, forcibly remind us (when the drawing is mentally corrected by the diagnosis) of this anciently observed species.

### **Turbo politus.**

The short description evidently points to *Eulima* as the modern genus in which this former *Turbo* should be located, and the "Habitat in M. Mediterraneo" greatly limits the

number of claimants for the specific appellation. Conchologists have generally assented to the appropriation of the term *polita* to the *Turbo albus* of Donovan (*Helix polita* of Montagu; *Eulima polita*, Deshayes), and, in default of a rival with more valid pretensions, the decision of the majority may be followed. The specified size, "grani hordei magnitudine," is, however, inferior to the ordinary dimensions of that shell.

Linnæus, in the tenth edition of the 'Systema,' has denoted his possession of this species; but in the twelfth edition of the same book the mark which signifies its presence is wanting. Along with the Linnean shells was a paper containing some examples of *Eulima* (?) *decussata* (Mont.); but the words upon it plainly demonstrated that these were added subsequently to the decease of our author. My earlier set of notes alludes to the presence in the collection of a wretched example of *E. polita* (Brit. Marine Conch. fig. 49), but I have failed in detecting it in a more recent examination.

### **Turbo Nautilus.**

This species lies in the Linnean cabinet enclosed in a small paper envelope, on which the name is written at full length. The specimens, which correspond to the engraving (f. 94) in Gray's 'Manual of the Land and Freshwater Shells of the British Islands,' belong to the *Planorbis imbricatis* of Müller, as was surmised by Montagu and other writers upon the *Testacea*. Deshayes, who, in the later volumes of his excellent edition of Lamarek's 'Animaux sans Vertèbres,' has paid considerable attention to the Linnean species, proposes that its original specific appellation should be restored to this shell.

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## H E L I X .

Although the value of the Linnean collection to the naturalist has been greatly deteriorated, throughout the entire cabinet, by the gradual obliteration of the significant numerals both upon the shells and the tin trays which contain the smaller examples, yet no portion has suffered so greatly as the genus *Helix*. Almost the entire contents of the trays have been promiscuously thrown upon the cotton wadding which lines the drawers; and as the majority of the described members of this genus were of small size, and consequently did not afford space for any inscription upon them, this proceeding is particularly to be deplored. Under these circumstances, the only mode of grappling with the difficulty was to compare each diagnosis with the entire contents of those drawers which contained the *Helices* (a task which demanded both time and patience), and act upon the principle, that should one shell, and one alone, accord with the description, and that species be noted in the manuscripts as present in the museum, no reasonable doubt could be entertained of the typical authority of the specimens. Yet, after all, this process of analysis, tedious as it has proved, is perhaps the soundest of all testimonies, when not baffled, as it too often has been, by the presence in the cabinet of some other allied species, and the equal balance of conflicting synonyms.

***Helix scarabæus.***

Our author, in addition to those figures which correctly represent the *Scarabus imbrium* of Férussac (the purified *Auricula scarabæus* of Lamarck), has cited in the 'Systema,' "Pet. Gaz. pl. 4, f. 10" (the *Scar. Petiverianus* of the same writer), and "List. Conch. 4, s. 5, c. 5, t. 1, f. 2" (his *Scar. plicatus*). Although the latter (and, indeed, both these shells) is so similar to *imbrium* in general aspect, that few of the earlier writers

would have hesitated to rank it as a mere variety, Linnæus seems eventually to have held it in suspicion; for in the manuscript alterations of his own copy, when substituting the more modern paging of Lister's 'Historiæ Conchyliorum,' for his previous method of referring to parts, sections, chapters, &c. (the original plates of Lister were not distinguished by any numeric succession, and were so irregularly arranged that scarcely two copies of his book are exactly alike\*), he has, by avoiding to write the full equivalent (pl. 577, f. 31, 32) for his previous synonym, virtually rejected the erroneous reference, by omitting the f. 32.

Of neither of these two *Scarabi* can it be affirmed that the painting is "ex albo fuscoque variegatus" (Mus. Ulric. p. 663); wherefore the later conchologists have regarded the *S. imbrium* as the true representative of *Helix scarabæus*. The accuracy of their decision is confirmed by the circumstance that no other member of *Scarabus* save that alone (Chemn. Conch. Cab. vol. ix. pl. 136, f. 1249, 1250) is present in the cabinet of Linnæus, who has recorded his possession of an example. The younger Linné had added "Pet. Amb. t. 12, f. 8" (copied from Rumphius) to the published synonymy.

### *Helix lapicida.*

Thanks to the ample details of the 'Fauna Suecica,' to the undoubted locality, which vastly limits the number of species to be compared with the description, and the correct reference to Lister's figure and account of the *Carocolla lapicida* of authors, that shell (Turt. Man. L. and F. W. Shells, pl. 5, f. 51, but paler), which is present (as declared) in the Linnean collection, where it exclusively answers to the definition, has been universally recognised for the veritable species of our author. Were further confirmation requisite, it might be found in the manuscript of the younger Linné, who has cited, as illustrative "List. Conch. t. 69, f. 68" and "Pet. Gaz. t. 92, f. 11." These

\* The engraved plates of copper are still preserved in the Ashmolean Museum of Oxford, which contains likewise a portion of the shell collection of that earliest of systematic British conchologists.



synonyms, indeed, were virtually quoted by Linnæus himself in the 'Fauna,' through his reference to "Pet. Mus. 69, No. 734;" since Petiver's species was defined solely by the two figures of Lister here mentioned, and his subsequent delineation refers to number 734 of his published list. Indeed, he actually and directly cited the drawing in Lister's 'Historiæ' by the name attached to the figure, but the 68 was misprinted 62 in the second edition of the 'Fauna Suecica.' The description in the 'Museum Ulricæ' agrees with the known characters, and even alludes to the almost imperceptible granulation.

In one of his many copies of the 'Systema' the following remark has been subjoined by Linnæus: "Mirum quomodo hæc humore suo calcem rodit; anne hæc lithontripticon esset."

### *Helix oculus=capri.*

It has long been suspected, from the language of the 'Museum Ulricæ,' that this shell was a member of the genus *Cyclostoma*, but the exact species has not yet been determined with certainty. The specimen marked for it in the Linnean cabinet, and which answers to the description of it in the 'Systema,' proves to be the *C. involvulus* of Sowerby's Monograph (Thes. Conch. i. pl. 26, f. 14). Certain individuals of the same species correspond exactly with the details in the 'Museum Ulricæ,' although the expression "glabra," often erroneously held equivalent to "lævis," but used by our author, in the opposite page of the same publication, in conjunction with "transversim striata," might seem opposed to the identification. Of the three figures cited as illustrative in the 'Systema,' that of Petiver (Gaz. pl. 76, f. 6) is the best, and was not improbably designed for the species: the other two must be suppressed, for the rounded coils of the *Helix unguina*, supposed to be represented by them, suit not the expression "subcarinata," and the concave spire attributed by Argenville to the shell he has delineated is adverse to the "spira elevata" of the 'Museum.' Klein's copy of Rumphius, originally referred to *oculus-capri*, was more fittingly referred to *unguina* in the final edition of

the 'Systema.' The Linnean shell was apparently included in the *H. volvulus* of Müller (whose *oculus-capri* was avowedly not that of our author), evidently so in the *Turbo volvulus* of Chemnitz (f. 1066), and was one, if not the principal, of the *Cyclostomæ* confounded by Lamarck under the same specific designation.

### *Helix albella.*

Several examples of the *Carocolla albella* of Lamarck (*H. explanata*, Rossm. Iconog. pl. 39, f. 539) were found in the cabinet of Linnæus, wrapped up in a morsel of Swedish paper. As these specimens admirably and exclusively agree with the diagnosis of this species, whose presence in his collection has been recorded by our author, no doubt of their typical authority can be reasonably entertained. In the revised copy of the 'Systema' "List. 80" has been referred to; which figure, whether intended or not for that species (it has been cited as a variety of it by Dillwyn), greatly resembles the more rubbed and aged individuals of the collection. The younger Linné has quoted in preference "List. t. 64, f. 62," which is a far more accurate representation of the species in question. From the circumstance that this *Helix* was inserted in the list of Northern *Testacea* in the 'Fauna Suecica,' whereas the Lamarckian *albella* is a native of the sunny South, and that the cited figure of Gualtier bears much resemblance to the *H. radiata*, Nilsson has suggested that the young of that well-known snail was possibly intended by this appellation. The "supra planiuscula, marginata" (Act. Upsal. 1736) and the "subtus valde gibba" (F. S.) are not suitable for that shell, of which, moreover, no individuals are to be found in the Linnean collection. So large a proportion of our supposed native *Testacea* has been admitted without due credentials, that it is far from improbable that one or two exotic species may have been introduced into the Fauna of Sweden.

## *Helix striatula.*

The *H. striatula* of Müller was not intended for the species thus named in the 'Systema,' the latter having been referred with doubt by that author to his *H. polita*. Chemnitz, Schröter, Dillwyn, &c., despaired of identifying the Linnean shell: Gmelin mixed up the description of *polita* with the diagnosis of *striatula*. Draparnaud, Michaud, Collard de Cherres, Deshayes, Rossmässler, Pfeiffer, &c., have with much probability suggested for it the *Helix lenticula* (of Férussac), a native of Algiers, which, except perchance in the "apertura subrotundo-lunata," precisely corresponds to the specific characters. It is not advisable, however, to deprive a well-known shell of its established name, by transferring to it that of a species which is not well constituted, and whose diagnosis, brief as it is, does not strictly correspond with all the characteristics. Menke, in an article in the 'Zeitschrift für Malacozoologie,' devoted to the especial investigation of some of the ambiguous Algerine species of the 'Systema,' has arrived at the conclusion that the *striatula* of Linnæus was identical with the *H. amanda* of Rossmässler (Ic. f. 449). Two circumstances corroborate this identification. The first is a manuscript reference in our author's revised 'Systema' to Petiver's 'Gazophylacium,' plate 17, figure 6, which rude drawing has very much the aspect of *amanda* (though probably meant for *caperata* or *virgata*), and assuredly exhibits the nearest approach to its features to be found in the engravings of that early period: the second, the preservation of a bleached individual ("grisea") of that pretty species in the Linnean cabinet. The "umbilicus patulus" seems opposed to the identification, but as the perforation is declared by Linnæus to be narrow in the contrast of its features with those of *Algira*, it seems probable that the monosyllable "non" may have been omitted by the printer.

## *Helix Algira.*

The *Helix Algira* of Draparnaud's work (Moll. Ter. et Fluv. France, pl. 7, f. 38, 39) is to be found in the Linnean cabinet, and of the shells therein contained approaches nearest in features to the standard required by the diagnosis. Indeed, were it not for the circumstance alluded to in my remarks upon *Lusitanica*, I should feel assured that one of the individuals (the more angulated specimen) had been the actual type. Nevertheless, it seems passing strange that Linnæus, when comparing this species with the preceding one, should have passed over its greatly superior dimensions, and should have omitted referring to that figure in Gualtier (pl. 3, f. G), which, from its general resemblance to the Draparnaudian shell, has been ordinarily cited for it. The studied brevity of our author's descriptions renders the former circumstance of but little importance; the latter may be accounted for by the probability that the drawing (even if designed for the species, and this is doubtful) would have been deliberately rejected, since, instead of the six specified whorls with a subangulated periphery, it exhibits only four rounded volutions. Upon the whole, then, the result of our investigation supports, rather than invalidates, the previous determination of the Linnean species.

Menke, in the 'Zeitschrift für Malakozoologie' for 1845, has commented upon the absurdity of calling a shell *Algira* (Algerine), which has not been found in the Barbary States. Its positive absence, however, is hardly proved from the negative testimony of the few conchologists who have prosecuted their researches in that region, since many snails are so remarkably local as to elude our pursuit, even in well-ascertained localities, and there seems nothing, so far as our limited knowledge of the geographical distribution of the Mollusca extends, which should prevent its appearance in Northern Africa.

## *Helix leucas.*

Müller, Schröter, Gmelin, and Dillwyn have alike been frustrated in the determination of a species whose brief diagnosis neither presented any salient character nor was aided by any reference to an illustrative figure. Férussac placed it as an uncertain species between *cicatricosa* and the *lævipès* of Müller; Menke, in his Synopsis (p. 24), cited the *albella* of Chemnitz (vol. ix. p. 87, pl. 126, f. 1105, 1106) as identical; the latter was intended by the author of the 'Conchylien Cabinet' for the *albella* of Linnæus.

Having perceived by his catalogue that Linnæus possessed the *H. leucas*, I carefully scrutinised each snail in his collection, and at length observed a paper in which were deposited certain specimens that exactly coincided with the description, which, moreover, was scarcely approached by any other *Helix* in the cabinet. These shells were young individuals of the *H. Pisana* of Müller (Draparn. Moll. France, pl. 5, f. 14, 15), and were in all probability the originals of the description. In this instance the figure mentioned by me as illustrative is that of an adult shell, and not a portrait of the Linnean examples: it was not thought worth while to delineate them, since *Pisana* is too well known to be mistaken by even a tyro in conchology. Their presence confirms the conjecture so skilfully hazarded by Dr. Pfeiffer.

Of course the well-established name of Müller should not be affected by this identification; since no conchologist, without actual examination of these specimens, could have ascertained what the illustrious Swede intended by his *H. leucas*.

## *Helix planorbis.*

Of the shells in the Linnean collection only two, the *Planorbis carinatus* and the *P. marginatus* of Draparnaud (Moll. France, pl. 2, f. 11 to 16), sufficiently harmonise with the characteristics and synonymy of this species to merit attention. Most writers have adjudged the name to the former; yet the pretensions of

the latter appear equally valid; "*pellucida*," indeed, may be more critically correct when affirmed of *carinatus*, yet "*subcarinata*" seems more suited to *marginatus*, to which, in truth (as Dillwyn has observed), the majority, if not the whole, of the cited figures belongs. These display a rather stronger carination than is ordinarily to be met with in *marginatus*, but do not at all exhibit that very rapid enlargement of the body whorl which is so striking a characteristic in *carinatus*. Upon the whole, then, the 'Systema' favours the claims of *marginatus*; for the expression "*pellucida*" is only mentioned in the 'Fauna Suecica.' In other respects the fuller description of that work is about equally applicable to either species. It seems likely, then, that our author regarded these two allied congeners as the same species; indeed, we might reasonably have expected so, knowing the greater latitude allowed to specific variation in the infancy of conchology. *Planorbis* having become a generic appellation, the probable confusion of species involves no change of nomenclature.

### *Helix complanata.*

It is not doubted that this shell, whose presence in our author's cabinet has been recorded, belonged to the carinated section of the genus *Planorbis*, of which there are only four members present in the collection of Linnæus, to wit, *vortex*, *marginatus*, *carinatus* and *nitidus* (Rossm. Icon. Conch. pt. 2, pl. 7, f. 114, 115). The first of these can be proved identical with the *Helix* thus named in the 'Systema;' "*deorsum carinata*" dismisses the second, its keel being central. That expression has induced certain writers, who erroneously conceived *carinatus* to be the precise equivalent of the *H. planorbis*, to regard *marginatus*, so nearly allied to it, but differing in that very feature, as the representative of the present shell. But "*deorsum carinata*" is equally applicable to *nitidus*, whilst "*supra convexa—subdiaphana—apertura semicordata*" (Fauna Suecica) is much more critically correct when affirmed of that little shell than of its larger rival; and as "*parva admodum*" is applied to it in the 'Fauna Suecica,' in the contrast of its features with those of

the preceding species, I feel no hesitation in asserting the identity of *nitidus* with the Linnean *Helix*. In justice to Draparnaud, it must be observed that his *Planorbis complanatus* was not asserted by him to be the *H. complanata* of the Swedish naturalist.

### *Helix ringens.*

Our author was not in possession of this quaint-looking shell, which he described from a specimen in the Tessinian Museum. In his own copy of the 'Systema' he has added "List. 99, f. 100" to the figures previously referred to; this, as well as his published synonyms of Argenville and Bonanni, have been all quoted for the *Anostoma depressum* of Lamareck, of which the *H. ringens* has been generally considered the exact equivalent. Whether this identification, based principally upon the pictorial synonyms, should be assented to, admits of grave doubt. "Testa magnitudine *H. lapicidæ*, sed magis convexa, livida, anfractu in medio carinato albo" scarcely coincides with a comparatively large shell, whose painting is described as "albida, superne linea rubente circulari." In respect to colour, the representation by Lister is most agreeable to the language of the 'Systema,' being delineated as of an almost uniform sombre hue. There are also certain discrepancies about the number of teeth or folds in the aperture of the shell, but the occasional presence of smaller intermediate denticles in *A. depressum* may account for this. Six only are enumerated by Linnæus; seven are mentioned by Lister; while the accurate Müller has ascribed eight to a shell, whose painting at least corresponds with the Lamareckian *depressum*. Mörch has suggested the *A. globulosum* of Lamareck as the true *ringens* of Linnæus, and I believe he is right, for the size, colouring and tothing are in accordance with the description in the 'Systema,' and as no figures of that now common shell were then extant, it was natural that Linnæus should cite the nearest approach to its features that he was acquainted with.

## *Helix carocolla.*

The *Carocolla albilabris* of Lamarck is now generally accepted as the representative of this species, and resumes the Linnean name in Pfeiffer's admirable 'Monographia Heliceorum.' The conclusion has doubtlessly been arrived at from the "Testa maxima, facie *H. lapicidæ*" of the 'Museum;' for in many respects it reminds one strongly of the shell alluded to, and may be reckoned among our largest *Helices*. The cited figure of Argenville exhibits the general aspect of that species, and has even been ascribed to it: it seems, however, equally like *inversicolor*. Hence a reference in the revised copy of the 'Systema' to plate 63 of Lister's 'Historiæ,' a recognised figure of *C. albilabris*, strengthens the established opinion.

## *Helix cornu-militare.*

Unfortunately for us Linnæus did not himself possess this shell, which from the first has been involved in deep obscurity. Müller has omitted the species; Chemnitz has doubtfully quoted it among the synonyms of his *Helix malum-terræ* (Conch. Cab. vol. ix. pl. 129, f. 1142, 1143); Gmelin, whilst indicating his dissent to this conclusion by a note of interrogation, has nevertheless referred us (therein copying Schröter) to another delineation of the same species in Knorr (pt. 6, pl. 32, f. 2), yet also retained the Linnean reference to Gualtier, who has depicted a very different shell from the Chemnitzian one; Lamarck has not adopted either appellation, but cited them both as synonyms of his *H. gigantea*; Dillwyn, without attempting to discuss the question of identification, has described the Chemnitzian species under the Linnean name: in this he has been followed by Deshayes and Pfeiffer. Yet a careful perusal of the details in the 'Museum Ulricæ' suggests the gravest doubts of this identification. The "apertura flavescens—margine undique fulvo, quasi ex crasso pigmento" is utterly opposed to the pure white tint of the mouth in *malum-terræ*, of



which, moreover, neither “*latere acuto*” (a sharp periphery) nor “*apertura—duplo latiore quam longa*” can be truly affirmed. Judging from these expressions, from the “*Testa convexa quasi ex uno contiguo*,” and from the illustrative figure in Gualtier, I cannot but suspect that one of the large *Carocollæ* (probably aged and decorticated) was the original of this description. The *C. angistoma* delineated in the last-named work does not display the white surface and the patulous reflection of the outer lip required by the ‘*Systema*.’

### *Helix vortex.*

The correctness of the synonymy and the description of this shell in the ‘*Fauna Suecica*’ have established its identity with the *Planorbis vortex* of modern systematists. This shell (Turton’s ‘*Manual of the Land and Freshwater Shells of the British Islands*,’ fig. 91) forms part of the Linnean collection, and alone of those present in the cabinet agrees with the language of our author and the figures he has cited. The manuscript of the younger Linné contains additional and corroborative references to “*Pet. Gaz. t. 92, f. 6.—List. Conch. t. 138, f. 43.*”

### *Helix scabra.*

Our author having recorded his possession of this *Helix*, no reasonable doubt can be entertained that the shell, which alone of his collection agrees with the description, should be regarded as the type. It is the *Littorina scabra* of modern conchologists, and was described and delineated by Chemnitz (*Conch. Cab.* vol. xi. pl. 210, f. 2074, 2075) under the Linnean name; that author having happily guessed at a species, which was neither defined by an adequate diagnosis nor illustrated by a reference to any engraving. It was probably included, too, in the *Phasianella angulifera* of Lamarck, but the limits of the latter can scarcely be ascertained, so very closely do the numerous varieties of *Littorina scabra* and *L. angulifera* (even with the amended definitions of Philippi) approach each other.

### *Helix Gothica.*

Although declared to be a native of Sweden, no mention of this shell occurs in the 'Fauna Suecica.' It could not be hoped that any naturalist would succeed in identifying a species defined solely by four characters, and unillustrated by any synonymy. The young of *H. lapicida* has been suggested as fulfilling most nearly the required conditions of features and locality; but certainty upon this point can never be attained, to, as the description was not drawn up from specimens in the collection of our author or of his royal patroness.

### *Helix Gualtierana.*

This is indisputably the *Carocolla Gualteriana* of Lamarck (Born, Mus. Cæs. pl. 13, f. 12, 13), the characteristic drawing of the author, in honour of whom it was designated, having always prevented any doubts upon its identity. By a typographical error, the correct reference to Gualtier, "68, f. E" has been changed to "69, f. E" in the Vienna reprint of the twelfth edition: the latter figure represents an *Haliotis*. Linnæus did not possess this shell.

### *Helix cornea.*

No shell in the Linnean collection will agree with the description and the synonymy of this species (for there are no allied congeners present), except the *Planorbis* whose identity has been universally allowed, the *P. corneus* of Draparnaud (Moll. Ter. et Fluv. France, pl. 1, f. 42, 43, 44). Our author has written, in one of his many copies of the 'Systema,' "ex hac fecit Lister purpuram, pungendo inter tentacula."

### *Helix spirorbis.*

Conchologists, with much probability, have decided that this shell was identical with the *Planorbis spirorbis* of Müller (Rossm. Icon. L. und S. Conch. f. 63). The paucity of European *Planorbes*, and no one can doubt from the description that it belonged to that genus, the recognition of a fair proportion of them as Linnean *Helices*,—thus leaving but few for comparison,—together with the specification of the number of volutions, has caused the determination of this unillustrated species to prove easier than could have been expected. Our author did not possess this shell.

### *Helix contorta.*

In confirmation of the received opinion, a specimen (Rossm. Icon. L. S. Conch. f. 117) of the *Planorbis contortus* of Draparnaud is present in the Linnean collection, where I find no other shells which correspond more exactly with the description. In the manuscript of the younger Linné a reference to “Pet. Gaz. t. 92, f. 8” has been added. That figure, although rude, has been also quoted by Dillwyn, Lamarck, &c., for this *Planorbis*.

### *Helix cornu=arietis.*

The determination of this species has been effected without difficulty, owing to the accordance of the three synonyms with the diagnosis. Its identity with the *Ampullaria cornu-arietis* (Sow. Gen. Shells, Amp. f. 3) has been established by general consent. The bands are usually more numerous than is specified in the ‘Systema;’ but in that respect the species appears somewhat variable. I may mention the attached locality, “Europe”! as confirmatory of my assertion, that no dependence can usually be reposed in the Linnean habitats: consequently, when estimating the value of conflicting testimonies,

in regard to cases where two or three shells have evidently been confused under one appellation, the authority of an unauthenticated locality, unless supported by other evidence, must succumb to that of the synonymy. The contrary has been the rule with one of our most distinguished naturalists.

The manuscript of the younger Linné quotes as an additional synonym "Pet. Gaz. pl. 92, f. 4."

### *Helix hispida.*

One specimen alone in the Linnean cabinet agrees with the definition of this species, and, as an example is stated to be present in the collection, we may fairly regard that individual as the type. It is, as might be expected from the "pilis raris brevissimis" of the 'Fauna Suecica,' the variety *concinna* (Gray, L. and F. W. Shells Brit. f. 135) of the *Helix hispida* of Draparnaud, &c. The younger Linné has illustrated the description by a reference to "Pet. Gaz. 93, f. 13." This engraving represents the under surface of a British shell, and is not a bad likeness of the Linnean example.

### *Helix ampullacea.*

Conchologists have not succeeded in ascertaining what species of *Ampullaria* (for to that genus it undoubtedly belonged) was designed by Linnæus. No data, indeed, were published by which an indisputable conclusion could be arrived at; for the two illustrations cited in the 'Museum' and in the tenth edition of the 'Systema' could not be recognised with certainty, and, as well as the many additional figures of Seba, represented distinct species. A marked example of the shell originally intended by our author in his 'Systema' is still preserved in his collection, and agrees precisely with his account of it in that work. It is not surprising that he was unable to indicate a correct delineation of it, since none were extant, until the very recent publication of Philippi's Monograph, in Kuster's edition of the 'Conchylien Cabinet.' As usual, a very different species

("Spira parum convexa, obtusiuscula," apparently contradicted by the subsequent "Noscitur spira ventricosiore") was described in the 'Museum Ulricæ:' the details of that work, however, and the rude figure of Rumphius (*globosa*?) would apply to more species than one; hence the *ampullacea* of that book cannot be regarded as defined, and the name is, consequently, left free to that of the 'Systema' and the cabinet. Philippi, to whom I sent a sketch of the typical example, has preferred to bestow a new appellation upon it: it is the *A. Linnæi* of his Monograph (pl. 20, f. 6), to which the cited figure of Gualtier (pl. 1, f. R) was the nearest approximation of the engravings available at that period.

### *Helix pomatia.*

The *Helix pomatia* of authors is marked for this species in the Linnean collection (Drap. Mol. France, pl. 5, f. 20, but bandless).

### *Helix glauca.*

Gronovius, Müller, and Chemnitz did not determine this species; Born, Gmelin, Dillwyn, and Deshayes recognised it in the *Ampullaria effusa*; Schröter, who has copied the original description, owning that he had not seen a specimen, countenanced this identification by citing a representation of that shell (Knorr, pt. 5, pl. 5, f. 3) as illustrative. The diagnosis of the *H. glauca* as it appears in both editions of the 'Systema' is very indefinite, but the more detailed description in the 'Museum Ulricæ' agrees very fairly with that shell, and favours the above conclusion. Whilst concurring in this identification, one naturally feels surprised that the excellent representation of *A. effusa* in the ponderous work of Seba (Mus. vol. iii. pl. 40, f. 3, 4, 5) was not indicated by our author; but the conchological portion of those bulky volumes was not once quoted throughout the 'Museum Ulricæ,' although profusely enough referred to in the last edition of the 'Systema' for such species as were (which this was not) in his own private collection.

Linnaeus does not appear to have possessed a copy of that book; at least his library did not include one when it was purchased by the Linnean Society of London. This may account, in some measure, for the peculiar carelessness he has displayed in his references to Seba, as it is not improbable that they were jotted down from some public or regal copy, without any comparison of the drawings with his typical specimens. There are few naturalists who have not sometimes been compelled to do the like.

### *Helix citrina.*

The numerals are partially erased on that specimen in the Linnean cabinet which alone agrees with the specific description. The shell is fairly represented by the *Helix citrina* of Chemnitz (Conch. Cab. vol. ix. pl. 131, f. 1170, 1171), having probably been identified by successive writers, through the fuller details of the 'Museum Ulricæ,' and the references to Argenville and Seba. As to the synonym of Gualtier, it demonstrates the extreme carelessness of our author (or his printer). In the tenth edition of the 'Systema,' plate 1, f. D, of that publication was cited (a young *Helix aspersa* of Müller); this was changed into plate 2, f. D (*H. nemoralis*) in the twelfth edition: in the 'Museum Ulricæ' alone the reference stood correctly, plate 3, f. D.

### *Helix arbustorum.*

The universal recognition of this snail is rather owing to the language of the 'Fauna Suecica' and to the cited figure of Lister (Angl. t. 2, f. 4), than to the diagnosis in the 'Systema,' or to the figure of Argenville. The latter synonym must certainly be expunged; the drawing looks more like *Helix nemoralis*. The *H. arbustorum* of authors is present in the Linnean collection; and in the manuscript of the younger Linné "Seba, Mus. iii. t. 38, f. 68" has been correctly referred to.

### *Helix zonaria.*

No shell in the Linnean cabinet agrees with the description of this species, except that (Seba, Mus. vol. iii. pl. 38, f. 55, 53) which has been generally admitted to be its representative, the *Helix zonaria* as defined by Pfeiffer in his Monograph of *Helices*. To my eyes the Linnean specimens appear also very similar to those delineated under this name by Chemnitz (Conch. Cab. vol. ix. pl. 32, f. 1188, 1189), but I observe that Pfeiffer has referred the former alone of these two drawings to *zonalis*; the latter being ascribed by him to *H. coluber*.

### *Helix unguolina.*

I perceive no shell in the Linnean cabinet which at all coincides with the ideal of this species, a circumstance of little importance, since the description in the 'Museum Ulricæ,' and the references to Rumphius (pl. 27, f. 9) and his copyist Klein (Ost. pl. 1, f. 11) have enabled naturalists to identify it, with sufficient certainty, as the *Helix unguolina* (Born. Test. Mus. Vind. pl. 15, f. 1) of Pfeiffer's Monograph. The synonym of Petiver (Gaz. pl. 1, f. 6) must be erased, as the drawing was meant for the *Cyclostoma planorbulum*, a shell which neither corresponds with the original definition in the tenth edition of the 'Systema' (where the correct reference to Rumphius stands alone), nor with the more ample details in the descriptive catalogue of the Queen of Sweden's collection.

### *Helix Itala.*

Having satisfied myself, by the process of analysis so often alluded to, that no shell in the Linnean cabinet, except the *Helix ericetorum* of authors (Chemnitz, Conch. Cab. vol. ix. pl. 132, f. 1192, 1193), accurately coincided with the diagnosis of this species, I was agreeably surprised by discerning the

significant numerals fully and distinctly inscribed upon one of the specimens; for very rarely is any writing to be found on the smaller shells of the collection. Da Costa and Montagu had surmised the identity of that common British snail with the *Itala* of Linnæus.

### *Helix Lusitanica.*

Müller and Schröter have not attempted to determine this ambiguous shell; Chemnitz, attending to the cited figure, rather than to the language of our author, has fancied he recognised it in what he has called *H. Guineensis contraria*; Gmelin, without altering the original description, has quoted the Chemnitzian along with other representations of reversed *Ampullariæ*, as illustrative; in this last proceeding he has been followed by Dillwyn. Karsten's unillustrated ideal is too baldly described for recognition. Lamarck has referred the species to his *Ampullaria Guinaica*. No sinistral *Ampullaria* is to be described in the typical collection; nor, indeed, did I expect to find one, since Linnæus has never failed to point out the circumstance of the whorls being reversed (as in *Turbo bidens*, *Helix perversa*, &c.). The presumed identification has been solely based upon the belief that the cited engraving of Gualtier (t. 2, f. T) represented the object described by Linnæus, a conclusion not warranted by the language of the 'Systema,' for the volutions in the species delineated are coloured and banded, not simply "flavescente—albidis," and the shape is subglobose, not merely "convexa, obtusa," terms used by Linnæus to indicate the depressed-orbicular contour of *H. citrina*. The drawing was doubtlessly referred to from the resemblance it exhibits in size, umbilication and general aspect to the snail which our author desired to indicate, but was evidently not regarded by him as an accurate representation, since in his own copy of Gualtier, where he has attached to the other figures the names used by himself in the 'Systema,' he has passed over that one without comment. The cabinet of the illustrious naturalist dispels all doubts upon the subject. Two specimens of the *Helix Algira* of Draparnaud are there present; the peri-



phery of the one is obsoletely carinated; in the other simply rounded. The former was possibly the *H. Algira* of the tenth edition of the 'Systema;' the latter, from not coinciding with the characters previously assigned, seems, judging from the "*Lusitanica*" actually written upon it (besides the significant numerals 684), to have been reproduced in the twelfth edition of the same work as another species. It fairly agrees, too, with its diagnosis, but of course can never claim priority, since it was not adequately defined. Neither, indeed, could the name *Lusitanica* (Portuguese) have been applied to the African *Ampullaria*, since even the law of priority must succumb, when a too strict adherence to it would perpetuate an error.

### *Helix mammillaris.*

The *Helix melanostoma* (*adusta* of Karsten) and an allied species in Born were regarded by the older conchologists as the representatives of this Linnean shell; but neither these, nor the *Natica mammillaris* of Lamarck, exhibit the features required by the description. They are smooth or nearly so, in place of being decussated by distant longitudinal striæ and excessively close spiral striolæ. The cited drawing of Argenville ("f. lin. 2, n. 7"), whether we take the seventh figure upon the second line, or figure 7 upon the third line, does not display the required characters, and can only be regarded as a partial approximation. It is clear from the expressions "*nimis mucronata*" and "*umbilicata*" that it was the former (a dorsal view) which was intended, the latter, a *Limnæa*, having been quoted by Linnæus for the imperforated *H. auricularia*. The general aspect of that engraving, in which the shell is depicted as being coarsely striated lengthwise, when modified by the descriptive definition, calls to mind some such *Natica*-like *Sigaretus* (it is declared to be paucispiral, with a capacious aperture), as the *S. papilla* of Chemnitz (Conch. Cab. v. f. 1939). Récluz, indeed, with some boldness, but great probability, has bestowed the Linnean appellation upon an allied species, which has been delineated in his Monograph of that genus in the 'Illustrations Conchyliologiques.' I find no shell in the

Linnean cabinet that will at all correspond with the Linnean characters.

### *Helix Hispana.*

From the meagre succinctness of its description, and the absence of an illustrative reference, this species has not been recognised by the older conchologists; Müller, Chemnitz, Schröter, Gmelin, Dillwyn, &c., having alike been baffled by it. Dr. Pfeiffer formerly conjectured that it might have been identical with the *H. cornea* of Draparnaud, but the "apertura suborbiculata" will not allow of this conclusion. In his Appendix to that invaluable production the 'Monographia Heliceorum' he has, on the authority of Dr. Beck ("teste Beck"), affixed the name *Hispana* to what (vol. i. p. 347, No. 906) he had previously regarded as the *planospira* of Lamarck. Since the very scanty characteristics do not apply exclusively to that *Helix*, I cannot imagine upon what grounds this conclusion has been arrived at; assuredly it was not from an examination of the Linnean cabinet, where neither the *planospira* nor any species allied to it is present. Indeed, the nearest approach in features to the diagnosis which I could find there was in the *Helix cellaria* (Rossm. Icon. f. 527), a shell which by no means coincides with such undeniable precision as to ensure certainty, although the manuscript addition "diaphana," together with the previous "cornea" and "anfractibus teretibus" suggest *Zonites* as the section to which it probably belonged.

### *Helix lutaria.*

The name *lutaria* (mud-dwelling) might induce a supposition that this most uncertain species was a member of some such fluviatile genus as *Limnæa*; it is not unlikely, however, that our author only implied mud-coloured by this specific appellation, since the language of the 'Museum Ulricæ' encourages the idea that it rather belonged to *Bulimus*. Even this is conjectural, for so succinct are the unillustrated descriptions of it

in both that publication and the 'Systema' (the "intus alba" of the former was, moreover, at variance with the "interne coloratiore" of the latter), that no naturalist, however erudite, could have successfully determined it upon sure grounds of credence. Hence, even had Linnæus possessed a specimen (which he did not), no claim of priority could, with justice, be advanced from the mere circumstance of its preservation in his cabinet. I find no traditional knowledge of it in any of the older writers; nor have I gleaned any additional particulars in the works of Müller, Chemnitz, Schröter, Gmelin, Dillwyn, &c.

### *Helix perversa.*

No specimen in the Linnean cabinet corresponds with the description of this shell, which, thanks to the description in the 'Museum Ulricæ,' has long been identified as the *Bulimus perversus* (Pfeif. Monog. Helic. ii. p. 37). Those conchologists who may not be willing to permit so great a latitude of variation to the species, can restrict the application of the Linnean epithet to the var. *a* of that work (*Bul. citrinus*, var. *a* of Lamarck), since of the cited figures those only (Gualt. pl. 5, f. P.—Argenv. pl. 12, f. G.) which represent that shell exhibit the characters ("contraria, sulphurea") required by the original diagnosis in the tenth edition of the 'Systema.'

### *Helix Ianthina.*

In the box marked as containing this species in the Linnean cabinet are specimens of an *Ianthina* (Encyclop. Méthod. Vers, pl. 456, f. 1), which is probably identical with the *I. communis* of Lamarck, but has the spire more elevated than in the majority of figures supposed to represent that species. This, moreover, is the *Ianthina* indicated by the synonymy of the 'Systema,' in which the following errors exist: Bonanni's uncoloured drawing, although suggestive of the species in shape, evidently was not intended for any member of the genus, since

the shell there represented is described as being spirally banded with black upon a yellowish ground; the "t. 572, f. 23" after "Sloan Jam. t. 1, f. 4," should have been preceded by "List. Conch.;" and the "Acta Angl. 301, p. 2051" was a typographical mistake.

### *Helix vivipara.*

So ill executed were most engravings of natural-historical subjects in the days of our author, that he was constrained to make allowances, in his references to them, for far greater aberrations from the typical characters of his specimens than we, in the present era of copious and accurate illustrations, should think of admitting. Hence, probably, it has occurred, that in addition to that *Paludina* (*P. achatina* of Turton, Rossmässler, &c.) which he has marked in his collection as the type of *H. vivipara*, and cited among his iconographic references (List. Conch. pl. 126, f. 26, which is a fair representation of the Linnean examples), he has also included the *Paludina vivipara* of Turton, C. Pfeiffer, Rossmässler, &c., in his synonymy. That species, so far from being "imperforata," is clearly umbilicated (as, in truth, are large individuals of *achatina*; not so the Linnean examples), but the quoted drawings do not sufficiently exhibit that feature to render their citation either unnatural or reprehensible: its contour, however, is so much more abbreviated than in the typical species, that the expression "oblongiuscula" (Fauna Suecica, edit. 1) would have been most inappropriate. Although, then, we cannot believe that Linnæus would have held the essential distinctions as of more than varietal importance, we are compelled, alike by the evidence of his type and of his language, to transfer the name *vivipara* from that which has commonly received it to its allied congener *P. achatina*.

I take this opportunity of rendering the terminology of Linnæus more clear by adverting to his use of the word longitudinal, without the due comprehension of which expression his meaning becomes occasionally difficult to understand. In general he has used it as equivalent to vertical or parallel to

the axis of the shell; but in his account of the present species in the 'Fauna Suecica' he has stated that the whorls are painted longitudinally, evidently here speaking of the spiral (or transverse) fillets. This seeming contradiction no longer appears one, when we observe that in the former case he is speaking of the shell as a whole, in the latter of the whorls as a part only of the shell; thus the same line may be longitudinal in relation to the "testa," and yet not so in relation to the "anfractus." A passage in his 'Fauna Suecica' (edit. 2, p. 531) explains this fully. He thus writes of the *H. putris*: "in omnibus striæ minutissimæ anfractuum transversæ, seu testæ longitudinales."

### *Helix nemoralis.*

Of the shells in the Linnean cabinet the *Helix nemoralis* (as defined by Pfeiffer in his Monograph of the *Helices*) exclusively agrees with the description and figures of this species: hence the specimens may fairly be considered typical. Nevertheless, as many writers still persist in regarding the *H. hortensis* of Draparnaud as specifically distinct, and not a mere variety, it becomes requisite to determine (since both these shells are present in the collection) for which of them the Linnean name should be reserved. The verbal definition in both the 'Systema' and the 'Fauna Suecica' would include *hortensis*, and in one of the quoted figures (Lister, Conch. pl. 57, middle f. 54; not 53, as in the twelfth edition of the 'Systema,' for that drawing was meant for *arbustorum*) the aperture is represented as pallid. The colouring of the mouth, however, is only mentioned in the 'Museum,' wherein the var. *b* seems the restricted *nemoralis* of modern writers, and the var. *a*, from the specification of its larger dimensions and of its greyer tint, seems rather to have been the *vermiculata* of Müller, of which many individuals are present in the cabinet; and the far greater preponderance, in the synonymy, of delineations of the dark-mouthed snail, justifies authors in assigning to it more especially the name *nemoralis*.

### *Helix lucorum.*

The references of Linnæus to the snails delineated in Gualtier are peculiarly infelicitous. The one cited in illustration of the present species does not answer to the "apertura fusca" of the very brief description, which is consequently too meagre for the purposes of definition. In the cabinet of our author the banded variety (Rossm. Icon. L. S. Conch. f. 549) of *Helix lactea* is marked for this shell, and corresponds with the diagnosis. The term "subrotunda" at first seems adverse to the determination, but Linnæus has likewise applied it to the preceding shell, whose form is nearly similar. It is not expedient to change the name of *lactea* on account of this identification, which could not reasonably have been surmised, for in truth the *H. lucorum* of Müller (as further defined by Pfeiffer) seemed, from the globose figure of Gualtier, a much more specious identification. Yet the engraving alluded to (often ascribed to *pomatia*) does not represent the shell described by Müller, whose species, moreover, has not its aperture oblong nor entirely fuscous, as demanded by the 'Systema,' but merely a brown peristome, for the interior is declared to be white ("apertura intus alba"). Consequently that shell must be termed, for the future, the *lucorum* of Müller, and not of Linnæus.

### *Helix grisea.*

The box thus marked in the Linnean cabinet is filled with examples of the *H. aspersa* of Müller (Turton, L. and F. W. Shells, f. 35). This fact agrees with the recorded opinion of Gmelin, Dillwyn, &c., who probably followed tradition in their identification; for the diagnosis, although not untrue of dead and bleached individuals, was by no means characteristic, and the reference to Gualtier (pl. 1, f. B) would rather mislead than otherwise. It was probably from the likeness of that figure to a gigantic *cineta*, that Pfeiffer, in his Monograph of *Helices*, has

changed the name of the latter to *grisea*; that species, however, is neither to be found in the collection, where the type of *grisea* is recorded to be present, nor was it the snail delineated by Gualtier, whose rude engraving reminds one of an aged *pomatia*, for which, indeed, it has been quoted. Would it not be better to drop altogether the name of so imperfectly defined a species as the present one?

### *Helix hæmastoma.*

The universal recognition of this snail (*Helix hæmastoma*, Crouch, *Introd. Conch.* pl. 14, f. 17) renders its absence from the Linnean collection of no importance. As no figures had been cited in illustration of the species, it was not uninteresting to remark in the interleaved copy of the 'Systema,' which had belonged to the younger Linné, the reference "Seb. Mus. iii. t. 40, f. 6, 7," which is confirmatory of the received identification.

### *Helix decollata.*

The presence of this shell (Draparnaud, *Moll. France*, pl. 4, f. 27, 28) in the Linnean collection, wherein it is the sole species that agrees with the descriptions of the 'Systema' and the 'Museum Ulricæ,' supports the received opinion of its identity with the *Bulimus decollatus* of modern writers. "List. 17" has been correctly added by our author to his published synonymy.

### *Helix subcylindrica.*

As in the entire collection of Linnæus only a single species, the *Truncatella Montagui* of Lowe (*Brit. Mar. Conch.* f. 75), agrees with the description of this shell, and that, too, exactly, no doubt can be entertained of the typical value of the

specimens, since we are assured by his catalogue of the presence of examples in his cabinet.

### *Helix stagnalis.*

Linnaeus having remarked that he had designated two *Helices* by the same appellation, has changed in his manuscript the name of the present and less known one into *Basteri*. Gmelin, who perceived the repetition of the same name, having noticed, probably, that although standing before the other *stagnalis* in the numerical succession of species in the twelfth edition of the 'Systema,' it was posterior to it in date of publication by several years, altered it to *stagnorum*, but added nothing else to our information respecting it: neither, indeed, have I discovered any further details in the pages of the older conchologists. In the 'Zeitschrift für Malakozöologie' for 1845 (p. 37), Menke has published a *Paludina stagnalis* as the Linnean shell, with the synonyms *Cyclostoma acutum*, Draparnaud (Moll. France, pl. 1, f. 23), *Paludina acuta*, Deshayes (Anim. s. Vert. vol. viii. p. 521), *Paludina stagnorum*, Turton (L. and F. W. Shells, f. 123), references which Philippi (Enum. Moll. Sicil. vol. i. p. 148), on the contrary, attributes to the Linnean *Turbo thermalis*.

One cannot wonder, indeed, that so much uncertainty prevails, since the meagre description in the 'Systema' was only illustrated by a reference to a most futile attempt at delineation and a bald and unmethodical description in Baster's 'Subseciva' (ii. p. 77, pl. 7, f. 4). The shell represented in that work was, as we learn from the text (for the only information to be gleaned from the drawing is that the whorls were slightly ventricose), about the eighth of an inch long, and of nearly half that breadth, had six volutions which terminated in an obtuse point, and were very delicately striated in a longitudinal direction; it was found in estuaries, with its surface, for the most part, incrustated with decayed vegetable matter. These characters certainly indicate a *Paludinella* (or *Hydrobia*), but the precise species could scarcely be positively determined from such scanty details. The surmise of Menke was perhaps, then, venturesome, but assuredly comes very near the mark, if not absolutely



correct. As the species is not recorded to have been in the possession of our author, his cabinet, of course, cannot be regarded as of much authority upon the subject. Nevertheless, it may be as well to mention that specimens, which accurately agreed with the language of the 'Systema,' were found enclosed in a paper inscribed "*Turbo antiquus*," which name was possibly, at one period, designed to have replaced the twice-employed appellation of *stagnalis*, for no species thus denominated has been published by our author. These individuals belong to a *Paludinella*, which is very closely allied to, and perchance identical with, the Menkean species, the *Helix ventrosa* of Montagu; at least certain examples agreed on comparison with some of the latter which had been taken in Greenwich Marshes, and which seemed identical with the *Paludina stagnorum* of Turton's 'Manual.' The last-named writer has made the following remark:—"It appears to us, that this is the hitherto obscure species of Linné, who by an oversight had given to two distinct species the name of *Helix stagnalis*. With his description our shell most accurately corresponds in every particular. By the term "margined," as applied to the aperture, it is here meant, as in some other places, that the margin is continued all round, and not interrupted by the convexity of the penultimate volution."

### *Helix octona.*

I observed no specimen in the Linnean collection which answered to the description of this shell, whose presence, indeed, is not asserted in the final list of *Testacea* furnished by the younger Linné. From the circumstance that Linnæus, in illustration of this species, had referred to a figure of *Achatina acicula* in Gualtier (plate 6, B B), it has been unwisely inferred that the two species were identical. The expression "apertura fere orbiculata" is so utterly at variance with the character of that shell, wherein the mouth is remarkably narrow, as to render further comment unnecessary. The *Bulimus octonus* of Bruguière (*Helix octona*, *Indiæ occidentalis*, of Chemnitz, fig. 1264) has, likewise, been suggested as the representative; but not only is the aperture in that exotic shell

unlike the description of it in the 'Systema,' but the pillar is so decidedly imperforated as not to afford grounds for the use of the term "subperforata" in the diagnosis, even when subsequently modified into "umbilicus adeo obsolete perforatus, ut vix constet utrum vere perforatus dicendus." With such adverse particulars, even had that common shell been present (which it is not) in the Linnean cabinet, the identification, unsupported by correspondence with the cited figure, must, at least, have been esteemed conjectural. Pennant, with some doubt, has attached the name *octona* to the *Limnæus glaber*; the shape of the aperture in that shell, however, is not roundish but elongated ovate. By far the most reasonable surmise is that of Nilsson, who, in his 'Historia Molluscorum Sueciæ,' has described a *Paludina octona*, which not only fairly agrees with the Linnean description, but corresponds also with the assigned locality ("Habitat in Sueciæ subpaludosis"), and approaches more nearly to the limited size attributed to the species than the West Indian *Bulimus*. The authority of that writer, too, is of great weight upon the Swedish shells; and although I have recorded my opinion of the little dependence to be placed upon the correctness of the Linnean localities, yet this stricture was not intended to apply to the indigenous species, which our author had both studied more peculiarly, and separately treated of in the 'Fauna Suecica.' It is probable that when he published that work he had not observed this little shell, since no notice was there taken of it; and the publication of the twelfth edition of the 'Systema,' wherein it first appeared, was posterior by some years to the date of the last edition of the 'Fauna.'

Menke, in the 'Zeitschrift für Malakozoologie' for 1845, agrees with the conclusion of Nilsson, but regards the present as merely a produced form of the preceding species.

### *Helix pella.*

As was generally the case with the smaller species of Linnæus, the older writers have added nothing to our knowledge of the present shell. Menke, in the 'Zeitschrift für

Malakozöologie' for 1845, has expressed his belief that it was a mere variety of *Littorina Grænlandica*.

From the language of Linnæus, and especially from the minuteness of the specified dimensions (for the seed of the *Lithospermum officinale* is at most the ninth of an inch long), there seems but little doubt that the *H. pella* was a member of the genus *Rissoa*, and probably a species not very unlike the *cingillus* (Mont. Test. Brit. pl. 12, f. 7) of our own shores, of which shell several examples are preserved in the typical collection. Their characteristics approach very closely to those required, and had not the preponderance of colour been attributed to the brown "fusca, fasciis flavis," whereas we should have expected "flavescens, fasciis fuscis"—a not very important difference, considering the ordinary looseness of the Linnean descriptions—might reasonably have been regarded as the original types of the species, since they alone in the entire cabinet, and our author has recorded his possession of specimens, correspond in other respects with the language of the 'Systema.' I do not, however, claim the name for that shell, but simply infer the probability of its identity.

### *Helix pupa.*

So inadequately characterised was this species that it has been altogether omitted by Müller and Chemnitz, and left, with only the original description attached to it, in the compilations of Schröter and Gmelin. Bruguière, followed in this respect by Dillwyn, boldly ventured upon identifying it with a shell subsequently termed by Turton *Bulimus tuberculatus* (Zoolog. Journal, vol. ii. p. 363, pl. 13, f. 4); his opinion seems, likewise, to be partly countenanced by Menke in an elaborate paper on those Linnean *Helices* reputed to be indigenous to Barbary (Zeit. Malak. 1845). Although the ascribed contour "ovato-oblonga" is utterly inapplicable to that shell, and the relative size of this species and the succeeding, which is said to be half as small again as the present, is diametrically opposed to such a conclusion (for the *Bulimus tuberculatus* is scarcely larger than the *Bul. acutus*), I diligently, yet vainly,

searched for examples of it in the Linnean cabinet. One shell alone in the entire collection, a colourless variety of the *Bulimus detritus* of authors (C. Pfeiffer, Deutsch Land and Süssw. Moll. pt. 1, pl. 3, f. 6), both fulfilled the requirements of the diagnosis and likewise agreed with the relative dimensions attributed to the two forms; and as the presence of *H. pupa* in the Linnean cabinet has been expressly recorded, I feel no hesitation in regarding that individual as the original type of our author.

### *Helix Barbara.*

From a brief description, unaccompanied by the citation of any suggestive delineation, it has hitherto been impossible to determine this species with convincing certainty. Gmelin, whilst slightly altering, has added nothing to, the language of the 'Systema;' Schröter evidently did not recognise it; Müller entirely omitted it. Férussac placed it as an uncertain species between *Bulimus calcareus* and *Bulimus acutus*; Beck as between *B. ventricosus* and *acutus*; Dillwyn as *B. acutus* itself. This last supposition is confirmed by a rigid analysis of the contents of the Linnean cabinet, wherein it is the sole species (and our author has recorded his possession of examples) which agrees with the diagnosis of the *H. Barbara*. There are many specimens present; some of the ordinary form represented by Draparnaud; others, and these alone accord with the "rudi,—fascia grisea cineta" of the description, coincide more aptly with the figure (24 of plate 3) in Gras's 'Mollusques de France.' The myriads of individuals of this species which swarm upon every bank and wall around Algiers might well cause it to be noticed by the correspondent of our author, the Swedish Consul (Brander) in that city.

### *Helix amarula.*

I find nothing in the collection of our author which at all agrees with his account of this species. The two cited figures

exactly resemble each other, and both represent a shell (*Melania amarula*, Sowerby, Gen. Sh. Mel. f. 1) whose characters harmonise with the few particulars enunciated in the 'Systema.' The following passage in the 'Museum Ulricæ' does not, however, apply to the generality of specimens:—"Striis copiosis-simis, minimis, albis—labium interius flavescens."

### *Helix stagnalis.*

The *Limnæus stagnalis* of authors (Turton, L. and F.W. Shells Brit. f. 104) is preserved in the Linnean cabinet, and exclusively corresponds with the definition of the species.

### *Helix fragilis.*

As the list of those shells which our author possessed does not include this name, no aid can be derived from an inspection of his cabinet. It is certain that it was a Swedish member of the genus *Limnæus*, but to what species it belonged has been a frequent subject of discussion. Draparnaud and the French favour the claims of *palustris*; Rossmässler and the Germans lean to the opinion that it was either the young or a produced and scarcely angulated variety of *stagnalis*, such as the one represented by Turton (f. 105) in his 'Manual of the Land and Fresh-Water Shells of the British Islands.' The positive determination of the precise species without the citation of an illustrative figure was hopeless; hence the manuscript selection of "List. 123, f. 21," in preference to "124," settles the question; the latter drawing represents *palustris*; the chosen engraving very fairly exhibits the rounded variety of *stagnalis*. Moreover, the expressions "alba" in the 'Acta Upsal. 1736' and "pellucida" in the 'Fauna Suecica' are more suggestive of that species than of its duskier rival; nevertheless, as far as description went, there was nothing to debar either shell from being the representative of the *Helix fragilis*.

### *Helix putris.*

The language of the 'Fauna Suecica' leaves no doubt that this shell belonged to the genus *Succinea*, of which the *amphibia* alone is present in the Linnean collection. Of this species there are two varieties in the cabinet, the narrower and more produced of which has been frequently regarded as distinct, and has been distinguished by the name of *Pfeifferi*. Although convinced myself, by the comparison of very long suites of specimens, of their essential unity, it may be as well to state, for the benefit of those who may entertain a contrary opinion, the reasons why the name *putris* should be adjudged to the more ventricose form. This preference is based upon the general assent of authors, the expression "ovata," which is unsuitable to *Pfeifferi*, and the figures referred to in illustration of the diagnosis. The word "diaphana" has been appropriately added by our author in his own copy of the 'Systema.'

### *Helix limosa.*

In this case no assistance can be obtained from an examination of the Linnean cabinet, since our author has not enumerated the present species among those possessed by himself. Had there been no reference to the 'Fauna Suecica' the brief description in the 'Systema' would have been peculiarly applicable to the *Succinea Pfeifferi*, as the "ovata" of the preceding diagnosis and the "oblongiuscula" of the present one aptly express the relative proportions of shape in the two shells; and the cited figure of Gualtier (pl. 5, H), only referred to, however, in the last edition of that publication, is certainly a *Succinea*, though more like *amphibia* than *Pfeifferi*. Whatever Linnæus may have eventually intended, the species, as it originally appeared in the first edition of the 'Fauna Suecica,' was certainly different, for five volutions are there attributed to it; and although no specific name was there allotted, yet as that description was exclusively referred to in the tenth edition

of the 'Systema,' where the number of the coils was not specified, five whorls are consequently assigned to it by implication.

Nilsson, with much doubt, has surmised the identity of *limosa* with the *Limnæus truncatulus*, but, although his suggestion is not devoid of plausibility, that shell does not correspond with strictness to either the "apertura ovata" of the 'Systema' or to the "Habitat in fluviis" of the 'Fauna.' The difference of habitat in the two works, for "Habitat in Europæ paludibus" is asserted of it in the former, argues a confusion of species. Perhaps, upon the whole, the hypothesis most likely to be correct is that which regards the river-dwelling snail of the 'Fauna' as a narrow form of the *L. pereger* (a shell so abundant that it must have been seen by Linnæus); nevertheless, being composed of four volutions only, it does not adequately coincide with the description. It appears to me, then, that the *Helix limosa* was too imperfectly defined for positive determination.

### *Helix tentaculata.*

This shell is not marked as being in the possession of Linnæus, but was clearly defined in the tenth edition of the 'Systema,' by references to the 'Fauna Suecica' and to Lister's 'Animalium Angliæ,' both which works clearly indicate the *Cyclostoma impurum* of Draparnaud (Moll. France, pl. 1, f. 20, the *Bithinia tentaculata* of modern writers) as the species intended. The allusion to its operculum in the 'Fauna' and the comparison of it to *vivipara* in the same publication, combined with our knowledge of the fewness of the operculated fluviatile shells indigenous to Sweden, would alone have sufficed to identify it; but this comparison is not at first obvious, since, owing to the transposition of species in the second edition of the 'Fauna,' the preceding shell to which it is likened appears, from the text being unaltered, to be *limosa*, instead of *vivipara*, which it follows in the arrangement of the first edition. This change of order, without corresponding change of language, is unfortunately not unprecedented in the 'Fauna Suecica.' I may instance, as more particularly striking from its incon-

gruity, the alleged likeness in form, as it reads in the second edition of the 'Fauna,' of the elongated *H. fragilis* (No. 2187), and the depressed *nemoralis* (No. 2186), whereas the similarity alluded to is that existing between the former (No. 1311 of ed. 1) and *H. stagnalis* (No. 1310 of ed. 1). What possibly may have prevented the universal recognition of *H. tentaculata* was the strange and unaccountable reference, in the last issue of the 'Systema,' to figures of the *Monodonta fragaroides* and allied species ("List. Conch. 642, f. 33—35.—Klein. Ost. t. 2, f. 53, 54.—Adanson, Seneg. i. pl. 12, f. 1"), which bear not the slightest resemblance to the shell described.

### *Helix auricularia.*

The *Limnæus auricularius* (Draparnaud, Moll. France, pl. 2, f. 28, 29) is the sole shell in the Linnean collection which strictly agrees with both the figures and descriptions of this species; hence, as our author has recorded his possession of examples, no doubt of the typical authority of the specimens can be entertained. The *L. ovatus* (Drap.), an allied congener, which in certain of its forms so closely resembles *auricularius* that it is almost impossible to determine the limits of the two, is likewise to be found in the cabinet, but the individual specimen there present is so characteristic that the spire is of moderate length, and the mouth but little expanded. Hence it was not likely to have been confounded (?) by our author with a species distinguished by a "spira brevissima—aperturæ margo reflexus" (F. S.). The reference to Klein must be expunged from the synonymy, since his figure was copied from a drawing in Lister (Conch. pl. 123, f. 121) that had been previously and more correctly cited by Linnæus for his *H. stagnalis*.

### *Helix lævigata.*

Notwithstanding that Schröter, Müller, Gmelin, and the other more ancient conchologists have not ventured to identify



this species, the writers upon English *Testacea* have unanimously selected the *Bulla velutina* of Müller (Zool. Dan. iii. pl. 101, f. 1 to 4) as its representative. The worn fry of that shell may approach in some respects the requirements of the diagnosis; but “*apertura postice elongata*” cannot be affirmed with truth of the adult. No specimen of it is present in the Linnean cabinet, where the nearest approach (and I suspect the real representative of it) is the *Lacuna pallidula* (Brit. Moll.), of which the imperforated variety *patula* exactly answers to the description. It is not, however, desirable to effect any alteration in the names; for the species of the ‘Systema’ was too imperfectly constituted to claim precedence: the definition would apply almost equally well to many other shells. Moreover, as the name *Velutina* is now universally accepted in a generic sense, the specific epithet *lævigata* may fairly be retained, inasmuch as the shell has been clearly defined by our British writers under that appellation, and may possibly have been the species so denominated by the illustrious Swede.

### *Helix Balthica.*

Our author did not possess this species, which, although described somewhat more fully in the ‘Fauna Suecica,’ does not appear to have been identified by the older conchologists (Müller, Chemnitz, Schröter, Gmelin, Dillwyn, &c.).

Nilsson, in his very accurate account of the land and fresh-water mollusks indigenous to Sweden (Hist. Moll. Sueciæ Ter. et Fluv. p. 65), has recognised it in his *Limn. Balthicus*, which is stated to be found on sea-weed in brackish water (a remarkable habitat for a member of the genus *Limnæa*); and this identification is supported by Menke in the ‘Zeitschrift für Malakozoologie’ for the year 1845. The “*ad maris Balthici littora*” favours the surmise; and assuredly, in relation to a Swedish shell, the opinion of one who has peculiarly devoted his attention to the *Testacea* of that region, and who is ordinarily so correct in his views, is not undeserving of our respect.

### *Helix Peritoides.*

Schröter has justly observed that the cited figure of Gualtier, who has delineated a pure white granulated shell, does not agree with the language of Linnæus in respect to this species. It, however, exhibits the general aspect of that shell (*Sigaretus Haliotideus*, Sowerby, Gen. Sh. Sig. f. 2) in his cabinet, which, from its exclusive correspondence with the diagnosis in the 'Systema,' and perfect accordance with the enlarged description in the 'Museum Ulricæ,' was undoubtedly the species meant by Linnæus, who has recorded his possession of an example. The *S. cymba* of Menke, a Peruvian shell, which from the expression "testa livida" (explained in the 'Museum' by "mucrone—livida—fauce livida") has been suggested as the true representative, is not present in the collection of our author, who has referred the figure of it in Bonanni, and a drawing in Lister which greatly resembles it, to *H. Haliotidea*.

### *Helix perspicua.*

In the entire collection of Linnæus only one shell corresponds with his description of this species. It proves to be, as Philippi had pronounced, the *Coriocella perspicua* of his 'Enumeratio' (Moll. Sicil. vol. i. pl. 10, f. 5; vol. ii. p. 142), the *Bulla Haliotidea* of the earlier British writers.

### *Helix Haliotidea.*

One species only in the Linnean cabinet, and our author has recorded his possession of an example, strictly agrees with his account of this shell. It is the *Sigaretus* engraved in the fourth plate (f. 7) of the present work, of which Linnæus at that period was unable to find the delineation of an adult specimen,

although he has referred in his synonymy to almost all the extant engravings of members of that genus. These, for the most part, are almost too rude to admit of incontestable recognition, but have been assigned by Récluz to the following members of the genus: *S. maculatus* (Argenville and Petiver), *S. planulatus* (Gualt. lower F.), *S. Haliotideus*, young (Gualt. upper F.), *S. Listeri* (Lister), *S. zonalis* (Rumphius and Klein), *S. cymba* (Bonanni), *S. concavus* of Lamarek (Adanson). Of these seven species the expression "depresso-planiuscula" excludes the last four; "*lactea*," strictly interpreted, the first; and "striis undatis" the second: as to the third, the drawing is so uncharacteristic that it has been subsequently quoted by the same writer for his *S. Antillarum*.

The types appear to be identical with the *Sig. Haliotoideus* of Récluz's Monograph (in Chenu's 'Illustrations Conchyliologiques'); but none of the figures in that costly publication precisely display their characteristic features. In general aspect they resemble the *S. Leachii* of Sowerby, but are remarkably planulate, and have a larger portion of their surface occupied by the spire. The species, though alleged to be a native of the Mediterranean, is, I believe, a tropical one: it is rare, but is present in the Cumingian collection.

### *Helix ambigua.*

The correctness of Philippi's surmise, that the *Fossarus Adansonii* was the *Helix ambigua* of Linnæus, is confirmed by the presence of that shell (Enum. Moll. Sicil. vol. ii. pl. 25, f. 1) in the cabinet of our author, where alone of the specimens therein contained it answers adequately to the requirements of the definition.

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## NERITA.

*Nerita canrena.*

No less than six species, at the least, of *Natica* were confused in the synonymy attached to this shell in both editions of the 'Systema;' to wit, *Chinensis* (Rump. 22, C); *canrena* of authors (Gualt. 67, V, X ?); *millepunctata* (Bon. 228; Gualt. 67, S; and possibly Arg. 10, C. Adanson, pl. 13, f. 3, though not unlike it, is, I believe, distinct); *maculata* (Bon. 224; Gualt. 67, Q, R); a very doubtful figure in Gualtier (67, E); and one of the many shells (Regenf. iii. f. 34) allied to the Lamarckian *N. glaucina*. Examples of nearly all these are present, though unmarked, in the Linnean cabinet, and are not repugnant to the brief diagnosis. Moreover, the three first correspond in order to the three first varieties of the *Nerita canrena* of the 'Museum Ulricæ;' the fourth variety in which work ("alba lineis undatis ferrugineis") was evidently the *Nat. lineata*, figures of which ("List. 559, f. 1," "Pet. Gaz. 101, f. 9") have been, likewise, cited by our author in the manuscript revision of his own work.

It is somewhat curious that the mass of conchologists (the older race of whom felt a greater reverence for their predecessors than our rising school is wont to exhibit) should have followed each other in selecting, as the more typical form, that very one which possessed the least claims to that preference. For of the many cited drawings one only (Gualt. 67, V.), and even that figure was passed over in the 'Museum Ulricæ,' incontestably represents a species whose portraiture in Argenville (10, A.) was deliberately rejected by our author, in favour of another (C) upon the same plate.

I fully agree, therefore, with that excellent critic M. Deshayes, that the name *canrena* (as a Linnean appellation) cannot be retained for any one species in particular, but believe that the four varieties of the 'Museum' should be severally added as

synonyms to the *Nat. Chinensis*, *canrena* (of authors), *millepunctata*, and *lineata*. If the name *must* be bestowed upon any one of these four individually the first of them has the merit of a better accordance with the general account of the species in the 'Museum Ulricæ.'

### *Nerita glaucina*.

Owing to the circumstance that no accurate delineation of the object intended by our author was then extant, the synonymy of this shell exhibits an unprecedented state of confusion. Even in the tenth edition of the 'Systema' no less than five perfectly distinct species were included in it, viz., *Turbo Nicobaricus?* (Gualt. 67, f. P.), *Natica Vitellus* (Rumph. pl. 22, f. A), *Nat. fulminata* (Gualt. pl. 67, f. M.), and two other *Naticæ*, delineated severally by Gualtier (67, f. T) and by Lister (pl. 563). The last of these was omitted in the twelfth edition, where "labio" replaces the original "lobo," and where *Nat. monilifera* (List. Angl. pl. 3, f. 10), the *N. glaucina* of British writers, *Nat. Alderi* (Fauna Suecica, 2197), and an erroneous reference (for there is no such numeral as f. 14 in plate 13 of Adanson's 'Senegal') swell out the list of discordant synonyms. The account in the 'Museum Ulricæ,' where the original references, save Lister only, again appeared, was opposed to the characters of all the species there quoted; and the few unillustrated details sufficed not for the definition of the object. From the many *Naticæ* thus incongruously associated together various writers have each arbitrarily selected a supposed representative of the Linnean *glaucina*. The appellation has been claimed, and with some degree of justice, for both *Alderi* and *monilifera*. Lamarck has been singularly unfortunate in his choice; since no figure of his *glaucina* is to be descried among the quoted engravings. In the Linnean cabinet is still preserved a marked individual (plate 3, f. 5), which both displays a general resemblance to Adanson, pl. 13, f. 2 (for which the invisible 14 was probably a misprint), and reminds one in certain points of most of the cited delineations, so far, at least, as to account in some measure for the extraordinary grouping there exhibited. The type thus at length discovered may perhaps be held a variety

of the *Natica collaria* of Lamarck, but that species is too briefly defined for me to absolutely assert the identity. Since I cannot indicate any other species to which I could unhesitatingly refer it, I have thought it advisable to describe the Linnean examples, premising that I have seen specimens that only differ in the rich brown hue of their pillar-lip, which colouring fades upon exposure, so as to suit the language of the 'Museum Ulricæ:' it is likely enough, however, that the specimen from which the later account in that publication was drawn up was essentially distinct, as in many other instances, from the individuals so briefly characterised in the 'Systema.'

Shell subglobose, rather depressed, broader than long, solid, smooth, not particularly glossy; surface almost entirely painted with a kind of network or close venulation of crowded, angularly flexuous, livid or reddish brown lines, that expose at irregular intervals numerous sagittate, whitish markings (these in the Linnean specimens are arranged in a somewhat spiral fashion, with their points leaning in the same direction), which seem generally more abundant along a narrow strip that runs a little below the middle of the body-whorl, and thus forms an indistinct fillet. The lines, being coarser and more distant below the tolerably distinct suture, appear to diverge from it on a whitish band, more particularly on the smaller turns which are elsewhere of an uniform livid hue. Whorls moderately convex, rather narrow; spire decidedly short and obtuse. Mouth rather narrow, filling two-thirds of the total length; throat of the adult usually stained with purple; inner lip whitish. Umbilical region dark rufous brown, girt with a more or less distinct white band; perforation commencing nearly half way up the shell, simple, contracted by a gibbous projection of the middle of the solid pillar-lip. Length five-sixths of an inch. Gibraltar and Algeria.

### *Nerita bitellus.*

Linnaeus has quoted a very recognisable delineation (Rumph. pl. 22, f. D) of the *Natica rufa* of authors as his sole illustration of this *Nerite*, and as the extremely brief diagnosis appears, to me at least, to apply fairly to that shell, the species may be

regarded as pictorially defined. This conclusion is corroborated by the numerals 625 (indicative of *vitellus* in the tenth edition of the 'Systema') inscribed upon an example (Gev. Conch. pl. 27, f. 296) in the Linnean cabinet.

As Rumphius had used the word *vitellus* in allusion to the beautifully painted congener which has been so designated by most conchologists, it has been generally surmised that the D of the reference was a misprint for A (a representation of that shell). The "*Valvata levis prima sive Vitellus*," however, perchance from having an "umbilico semiclauso," has been confounded by Linnæus with *glaucina*! in his synonymy; moreover, the Rumphian appellation of the present shell has been written in full. The "umbilico æquali" has also been objected to, but is quite as well (if not better) suited to *rufa* as it is to the half-closed perforation of the rival claimant.

### *Nerita albumen.*

A carelessness, even beyond his wont, has been exhibited by Linnæus in the synonymy of this species. He has referred us to figures of six distinct shells, two of which (those of Regenfuss and Lister) do not suit his description in the umbilicus, and one (Argenville) in the shape. The other illustrations convey a fair impression of the Linnean ideal, a depressed *Natica* with an expanded umbilical lobe: the presence or absence of a sulcus upon it, and the distinctions of colouring, &c., would have been regarded by him as of mere varietal importance. It is not impossible that the reading of his manuscript was "10, f. V" in the reference to Argenville in place of "10, f. T" (the adjacent figure), and "t. 3, f. 34" in lieu of "t. 5, f. 54" in the reference to Regenfuss: in that case we should have had (except as to Lister, quoted from its inspection by others) a synonymy in harmony with the brief description in the 'Systema.' This, however, would have comprehended *Nat. albumen* (Rumph.), *Nat. didyma* of Bolten (Gualt. f. B, central; Arg. f. V.; the *N. glaucina* of Lamarck), and an allied congener without the sulcus upon the lobe (Gualt. f. A and lateral B; Reg. f. 34); all these forms are present in the Linnean cabinet, but the indicative numerals have become obliterated. As they answer

alike to the brief definition in the 'Systema' (and consequently should each be quoted as "*Nerita albumen*, partim"), yet not one of them precisely corresponds with the details specified in the 'Museum Ulricæ' (where, by-the-bye, "subglobosa" replaced "convexa," and no mention was made of the peculiar lobe), an arbitrary selection became almost inevitable, if the name was to be preserved at all in our catalogues. The majority of conchologists have preferred to retain the appellation for the shell delineated by Rumphius, and assuredly the original distinctive characteristics of simple convexity and flatness of lobe are preeminently developed in that species (*Natica albumen* of Lamarck); moreover, the "*Vitellus compressus*" of the Dutch naturalist suggested, in all probability, the specific epithet.

### ***Nerita mammilla.***

So many very similar shells, formerly regarded as at most varietal forms of a common and widely diffused species (the *Natica mammilla* cf authors), have been distinguished, of late, as essentially distinct, that it becomes desirable to ascertain which of them, and upon what grounds, is best entitled to the original appellation. It is manifest from the expressions used relative to an umbilicus in both the 'Systema' and the 'Museum Ulricæ,' as well as from the "lactea aut lutea" of the latter publication, that Linnæus admitted of so wide a range of variation, that even had a marked example of *mammilla* been preserved in his cabinet, it would not have decided the question. Divers *Naticæ* are referred to in the synonymy; yet the majority of the cited figures (although, from the rudeness of their execution, and the circumstance that many of them are only dorsal views, it would be bold to decide respecting them) appears to be intended for the common imperforated snow-white Oriental shell (Chemn. Conch. Cab. v. pl. 189, f. 1928, 1929) which had been known by the equivalent epithet "mamma" and "mammelon blanc" long previously to the publication of the 'Systema.' The early and general acceptance of that species (numerous individuals of which are present in the Linnean collection) seems to have been based upon these grounds, and



was not unreasonable. The D of Gualtier must be excluded from a correct synonymy; and although Seba's engraving looks very like the traditional *mammilla*, his description will scarcely allow of such an impression. The substitution, in the revised 'Systema,' of "List. 571" for the longer reference to the first edition of the 'Historiæ,' has demonstrated that our author, in citing that iconography, had been wont to reckon as a single "tabula" all the copper-plates upon one page. He has added "testa sæpius lactea" to his published description.

### *Nerita corona.*

It must appear marvellous to the critical naturalist that the *Neritina corona* of authors should ever have been regarded as the true representative of this Linnean *Nerita*. Récluz, in one of his admirable papers upon this group, published in the 'Revue Zoologique,' has proposed the appropriate name *longispina* for that common shell, denying positively that it was the *corona* of Linnæus. A careful perusal of the 'Museum Ulricæ' rendered this conclusion inevitable; since not only was that pitch-coloured *Neritina* unrepresented by any of the pictorial references, but the "cinerea, adspersa punctis oblongiusculis" of that publication was opposed to its well-known characters.

The *Neritina*, which alone of those in the Linnean collection answers to the description of *corona* (and our author has recorded, in a list appended to the tenth edition, his possession of an example), has been pronounced identical by Sowerby with the shell he has delineated in the 'Thesaurus' under this appellation. The specimens are very young, and do not so perfectly resemble the adult shells he has delineated as to render the citation of them as portraitures desirable: one of the types has consequently been delineated in Plate V. (f. 10) of the present work. The cited illustrations convey a very fair idea of the shell intended, and if not identical (they are almost too rude to decide upon) were assuredly the nearest approximations to it then published. Petiver's was copied from Rumphius's: Argenville's shell is said to be olive, with the spines black.

## *Nerita radula.*

The *Neritopsis cancellata* of Sowerby's 'Genera of Shells' (f. 1) is marked for this species in the Linnean collection, and well agrees with the more detailed features mentioned in the 'Museum Ulricæ.'

## *Nerita cornea.*

Born alone, among the older writers, appears to have observed any shell which answered to the characters of this species; his account of it has been translated by Dillwyn in his 'Descriptive Catalogue.' Récluz, whose comprehensive examination of the *Nerite* group entitles him to a high rank as an authority respecting them, has adopted the identification by Born, and recognised the Linnean shell as inclusive of the four following varieties: *Neritina amphibia* and *ampullaria* of Lesson (Voyage Coquille, vol. ii. pl. 16, f. 1, and p. 376), *N. subsulcata* of Sowerby (Conch. Ill.), and *N. fasciata* of Lamarck (Encycl. Méth. Vers, pl. 455, f. 5). He has excluded the synonym of Argenville, and considered the *cornea* of Forskal to be essentially distinct. There is much plausibility in this conclusion, although the colouring specified in the 'Museum' is not habitual to the supposed representative, and the expression "plurimis" is too strong for the spiral striæ: nevertheless, it would be difficult to point out any edentulous *Neritina* (and "labiis edentulis" is a most important feature) that in the main agrees so well, and, whatever Argenville's figure may have been designed for, so nearly resembles it (Sow. Thes. Conch. Neritina, f. 71) in size and painting. This engraving, however, was a dorsal view of a true *Nerita* (*chameleon*??), but was the nearest approach then extant to the *Neritina cornea* of Récluz's Monograph. I find no shell in the Linnean collection that corresponds with the description in the 'Museum Ulricæ,' or even with the brief diagnosis of the 'Systema,' as illustrated by the figure of Argenville.

### *Nerita fluviatilis.*

The *Neritina fluviatilis* (Brit. Moll. pl. 71, f. 1, 2) of authors is contained in the box marked for this shell in the Linnean collection, and alone of the *Nerites* there present agrees with the description and synonymy of the species. No difficulty was experienced in the recognition of this shell, thanks to the correctness of its synonymy, and the circumstance of the cited delineations having been sufficiently accurate to distinguish so common and widely diffused a species.

### *Nerita littoralis.*

The extreme abundance and Swedish locality of this shore-frequenting shell seems to have caused its early recognition, despite of an utterly insufficient description and an erroneous synonymy. The reference to Lister's 'Historiæ' is easily corrected, section 5 being the true reading, and not section 8, where the engraving is utterly at variance with both the generic and specific features. Thus amended this synonym indicates the *Littorina* (*Turbo*) *Neritoides* of Lamarck, which is the species described in the cited page of Lister's work on English shells. The reference to plate 2, f. 3 of that publication, which had been previously, and with more correctness, cited by Linnæus for *H. nemoralis*, was clearly a misprint for pl. 2, f. 11, for that drawing belongs to the referred-to description. The reference to Petiver's 'Museum' may be regarded as confirmatory of the accepted recognition, since that writer has quoted the figures in the two works of Lister, and declared it to be a common British species. Very many specimens of the *Littorina Neritoides* (Donov. Brit. Shells, vol. i. pl. 20, f. 2) are present in the Linnean cabinet, but whatever markings may have once been observable upon either them or their receptacle have now become obliterated. The dwarf freshwater! variety, on account of which Gualtier, who has represented *Neritina fluviatilis* or some closely-allied congener, was probably quoted, was not mentioned in the tenth edition.

### *Nerita lacustris.*

This inadequately described shell could not possibly have been identified from any particulars furnished by Linnæus. The meagre account originally published in the tenth edition of the 'Systema' was reproduced verbatim in the 'Fauna Suecica;' the only addition in the final issue of the 'Systema' being the two references to the last-named work and to Gualtier, and the words "et fontibus calidis" derived from the latter. Had it not been for the fluviatile locality and the cited engraving one might reasonably have conjectured that it was a *Littorina* allied to the preceding species; both these, however, suggest its allocation in the genus *Neritina*. The shell delineated by Gualtier, which reminds us of one of the many varieties of *N. meridionalis*, is stated to have been "subnigra, candidis punctis aspersa," language which scarcely harmonises enough with the "cornea" of the diagnosis to render the illustrative reference decisive as to the species. The only Swedish *Neritina* recorded by Nilsson is the *fluviatilis*; so that the *N. lacustris* of the 'Fauna,' at least, was in all probability only a variety of that many-coloured shell, an opinion corroborated in some measure by the circumstance, that although Linnæus has certified his possession of an example, the only member of that genus in his cabinet which is not absolutely at variance with the recorded features is a remarkable glabrous horn-coloured variety of that well-known shell, whose aspect differs so strikingly from the rougher and variegated specimens obtained in "Europæ cataractis," that its essential identity might reasonably have been doubted.

### *Nerita pulligera.*

The abraded remains of egg-cases are often perceptible upon specimens of the larger *Neritinæ*, and are graphically enough depicted by our author in the three last lines of his description. The name *pulligera* ("pullos in dorso testæ gerit") was bestowed from this circumstance, in the belief that the young fry, thus

encased, were transported, gipsy-fashion, on the back of their parents.

Our author has not indicated his possession of an example; consequently his collection throws no additional light upon the species. His account of it, however, is more complete than is usual in the 'Systema,' and does not seem at variance with the solitary figure referred to as illustrative; hence a general recognition of the *Neritina pulligera* (Born, Test. Mus. Vind. pl. 17, f. 9, 10), as its representative, has ensued.

### *Nerita pupa.*

Despite the startling assertion of its equality in size with *Nerita littoralis*, the peculiar colouring attributed to this shell has caused its established recognition as the *Neritina pupa* (Desh. ed. Lam. viii. p. 587). This determination of the species is both sanctioned by the presence (as recorded by our author) of examples of it (Conch. Illus. Ner. f. 30, upper fig.) in his cabinet (the original numerals have been partially effaced from the box that contains them), which alone of the four or five *Neritinæ* of the Linnean collection answer to the other requirements of the definition, and by the illustrative synonyms of "List. 605, f. 31," "Pet. Gaz. 15, f. 8," inserted together with the correct locality "Jamaica" in the proposed new edition of our author's 'Systema.'

### *Nerita videns.*

Unfortunately for us, Linnæus himself neither possessed this shell nor has added any particulars respecting it in his manuscripts. The species does not appear to have been recognised by naturalists, who could not, indeed, have identified it upon logical grounds, since the description of it was utterly insufficient, and was not illustrated by any pictorial reference. There exists even a discrepancy between the brief account of it in the final edition of the 'Systema,' where the colouring is stated to be green, and its alleged hue ("atra" "lutea") in the more detailed characters of the 'Museum Ulricæ.' The specimens

described in that publication were the original types, having been referred to as such in the earlier edition of the 'Systema,' where the obnoxious "viridi" did not occur. Judging from the dimensions "magnitudi pisi" (M. U.), and the smoothness of the outer lip, "labium exterius—utrinque læve" (M. U.), one is inclined to suspect that it was a member of the genus *Neritina*: Récluz, however, a high authority, has doubtfully suggested that it may have been the fry of *Nerita Rumphii*. Although stated to be only the size of a pea, a large *Nerite* figured by Chemnitz in the tenth volume of his 'Conchylien Cabinet' (pl. 165, f. 1594, 5), has been ascribed to it, as a variety, by Gmelin: he, too, possibly conjectured that *bidens* had been constituted from immature examples.

### *Nerita viridis.*

Since we are assured by his lists that Linnæus possessed an example of this shell, and one species only in his entire collection will agree with the description, no reasonable doubt of the typical authority of these individuals can be entertained. The specimens belong to the *Neritina* generally recognised as the Linnean *viridis*, and not to that closely-allied congener *Rangiana*, which has been sometimes confused with it. The *Neritina*, f. 24 of Sowerby's 'Conchological Illustrations,' may be cited as illustrative; but the ordinary white markings are not exhibited there, and the dark lines are more conspicuously displayed than is usual.

### *Nerita virginea.*

The *Neritina virginea*, as it originally appeared in the tenth edition of the 'Systema,' was accompanied solely by two references, Bonanni (f. 204) and Petiver (pl. 11, f. 3): the former of these exhibits the *Neritina virginea* (var. *Brasiliana*) of authors, the latter *Neritina strigilata* of Lamarck. The description, although brief, clearly points out the former as the more typical form, by the expression "labio interiore gibbo," the gibbosity

of the inner lip being peculiarly marked in that shell, and by no means conspicuously so in the other.

Both these figures were repudiated in the 'Museum Ulricæ,' and Argenville's plate 10, f. P, substituted for them; this synonym, however, was continued in the twelfth edition of the 'Systema.' That figure exhibits a large species with a peculiarly depressed spire, features at variance with the "parva" and "spira—elongata" of the 'Museum;' its painting and size remind one of *N. ziczac* in Sowerby's 'Thesaurus.'

Naturalists in general have wisely retained the specific appellation for the shell which was apparently intended in the tenth edition; and their selection is justified by the preservation of specimens of it (Geve, Conchylien, f. 250, 252, or Schröt. Einl. pl. 4, f. 14) in the box thus marked in the Linnean cabinet. Nothing which resembles the shell depicted by Argenville is present in the collection. It is not improbable that more than one species was confused in the 'Museum Ulricæ;' the markings there described are not habitual to *N. virginea*, for which reason, probably, Récluz, who may not have been aware how often the shell of the 'Museum' was different from that of the 'Systema,' has rejected the Linnean *virginea*, which he considers (Journ. Conch.) to be compounded of *ziczac* and *zebra*, as a species, and has bestowed the name *Brasiliana* (Rev. Zool.) upon its traditional representative (Sow. Thes. Conch. ii. Ner. f. 236, 7).

### *Nerita polita.*

The major portion, if not the whole, of the pictorial synonyms was so clearly designed for the *Nerita polita* of authors (Mawe, Conch. pl. 30, f. 1) that, despite the "labiis utrisque dentatis" (modified, however, in the 'Museum Ulricæ' to "Labium exterius—intus crenatum, absque dentibus prominentibus"), naturalists have unanimously selected that shell as the representative of the Linnean species. It is not desirable to oppose the accepted opinion, since, whatever may have been the shell originally designed, the unsupported description of the 'Systema' is much too brief to define it; moreover, there is a fair probability that the same *Nerite* was intended as in the

'Museum Ulricæ,' since the outer lip, though more often smooth internally, is frequently crenated. I should have suspected, however, from that feature, that the *N. Rumphii* of Récluz (Chemn. Conch. Cab. v. f. 2013, 2014), might have been the species of the 'Systema' had the cited figures corroborated the supposition. Both species are present in the collection of Linnæus, but the uncleaned and unworn appearance of the specimens of the latter seems to evince that they were of subsequent introduction into the cabinet.

### *Nerita peleronta.*

The specific appellation was a barbaric Latinization of "*pelerontie*," the Belgian name attached to the referred-to engraving of Rumphius. It was not, however, from that figure, which suits not the "*striata*" of the diagnosis, and which seems intended for a variety of *N. polita* (a shell whose inner lip does not accord with the expression "*interiore planiusculo*"), but through the ample details of the 'Museum Ulricæ,' that naturalists have succeeded in identifying this peculiarly characterised species. The *Nerita peleronta* of authors (Sowerby, Genera shells, Ner. f. 1) is only partially marked in the Linnean cabinet (the writing being nearly effaced), but since, alone of those present, it answers to the specific descriptions, no reasonable doubt can be entertained of the typical authority of the examples, one of which displays the exact colour specified in the 'Museum.'

One feels surprised, perchance, that Argenville's figures (pl. 10, f. H, O) of this *Nerite* were not cited as illustrative; but they are so far from characteristic (being represented as smooth-surfaced), that we are only enabled to recognise them from the description which accompanies them. In truth, very few recognisable delineations of members of this genus are to be found in the iconographies consulted by our author.

Récluz (J. Conch.) has suggested the identity of the Linnean species with his *N. patula*. I am unable to comprehend the grounds of this surmise, as the latter is declared by him (Rev. Zool.) to be devoid of teeth upon the outer lip.



### *Nerita albicilla.*

A single illustrative figure having been alone cited by our author, and the engraving referred to being that of a shell whose features accord with the specified characteristics, the determination of the Linnean species was easily effected: the more readily so, since the details of the 'Museum Ulricæ' for once agreed with the briefer account of the *Nerite* in the 'Systema.' Examples of the *Nerita albicilla* of authors (Chemn. Conch. Cab. v. pl. 193, f. 200, a to d) are still preserved in the cabinet of Linnæus, and alone of the specimens there present answer to the requirements of the combined pictorial and descriptive definition.

### *Nerita histrio.*

It is to be regretted that our author did not himself possess an example of this species, which has long been involved in such obscurity that no writer has dared to positively assert his successful recognition of it. Chemnitz having delineated certain shells, whose identity with the Linnean *Nerite* he had doubtfully surmised, but which he had not ventured to designate with the same appellation, Schröter and Gmelin have referred to his figures in illustration of *histrio*; the former, however, has honestly avowed his ignorance of the shell designed by the illustrious Swede, whose description he has copied. Dillwyn has described the Chemnitzian shells for his *Nerita histrio*, but has questioned their identity with the species intended by Linnæus. Now, as Chemnitz had confounded two very distinct shells (Conch. Cab. v. f. 1948, 9 and 1960, 1), neither of which, however, precisely harmonised with the "labium exterius extus intusque integerrimum" of the 'Museum Ulricæ,' Récluz, who has peculiarly devoted his attention to this group, has bestowed the name *Maura* upon the former (regarded as *histrio* proper by Deshayes), and of *Chemnitzii* upon the latter, in the belief that the *squamulata* of Le Guillon (Rev. Zool. 1841) merited the Linnean appellation

better than either of them. The cited figure of Rumphius has very much the aspect of that shell, and there is nothing in the very meagre account in the 'Systema' that opposes such an identification.

The language of the 'Museum Ulricæ' does not correspond with the features of any of the *Nerita* just mentioned. It is not, indeed, impossible, as Deshayes has remarked, that the inner surface of the outer lip may have been worn away (by hermit-crabs) in the specimens there described from; it is quite as probable, however, since more than one member of that group is destitute of internal sculpture upon the outer lip, that they fulfilled naturally the terms of the definition ("labium exterius extus intusque læve, integerrimum").

### *Nerita plicata.*

Unaided by any illustrative reference to an engraving, naturalists, nevertheless, succeeded in identifying this species, thanks to the excellent description of it in the 'Museum Ulricæ.' Linnæus, in his revised 'Systema,' has remedied this omission by quoting "List. t. 395, f. 3" as a delineation of his shell, which corroborates the received opinion. He would, in all probability, have published this synonym, had he from the first possessed a copy of the 'Historiæ,' a work which he was wont to quote, as he has himself confessed, from the observations of others.

The *Nerita plicata* of authors (Born, Test. Mus. Vind. pl. 17, f. 17, 18) is present in the collection of Linnæus, who has recorded his possession of an example, and exclusively agrees with the definition.

### *Nerita grossa.*

Thanks to the enlarged account in the 'Museum Ulricæ,' and the cited engraving of Rumphius, the identification of the *Nerita grossa* has been effected with ease and certainty. It is the species thus named by Chemnitz (Conch. Cab. vol. v. pl. 191, f. 1968, 1969), by Dillwyn, and by Deshayes, in his edition of

the 'Animaux sans Vertèbres.' Born has failed in the recognition of it; his shell was apparently the *Nerita costata* of Chemnitz. Linnæus did not himself possess a specimen.

### *Nerita chamæleon.*

The *Nerita chamæleon* of authors (plate 4, f. 8) is marked for this species in the Linnean collection. There are, likewise, several examples which both resemble figures 1988 to 90 of the fifth volume of Chemnitz, and plate 3, f. 26 of Regenfuss.

The description in the 'Museum Ulricæ' is excellent, but the engravings referred to in that publication for the variety *b* are very unlike the typical form. In regard to the three synonyms of the 'Systema,' the figure of Rumphius has been generally ascribed to *chamæleon*, that of Regenfuss is not unlike it, Argenville's looks more like *versicolor*.

### *Nerita undata.*

The cited figures exhibit two distinct species, neither of which possesses the required characteristics. Both of them display a coarse kind of ribbing, in place of the "sulcis triginta" of the description: Gualtier's drawing, moreover, does not present the sharp and projecting spire ("spira acuta, prominens," M. U.), nor the stated granules upon its inner lip ("labium interius—adpersum punctis eminentibus in disco," M. U.); and the *Nerite* engraved by Rumphius (*pica* of Chemnitz) is destitute of the "fasciis latiusculis" which are attributed to the species in the 'Systema.' We must, consequently, regard these drawings, which, after all, are not so unlike *undata*, as merely the nearest approximations to his species that our author, in the dearth of published illustrations, could descry, and not defer to them as accurate likenesses of the object intended.

Almost all writers have concurred in regarding figures 1950, 1951, of the fifth volume of Chemnitz's 'Conchylien Cabinet' as correct representations of the Linnean species, and these engravings have been alike quoted for it by the learned

Deshayes, and by the laborious Récluz. The description of it by the former, in his edition of the 'Animaux sans Vertèbres' (viii. p. 616), so admirably coincides with the detailed account of it in the 'Museum Ulricæ' that scarcely a doubt of the accuracy of this identification any longer exists.

### *Nerita exuvia.*

That the *Nerite* (Encycl. Méth. Vers, pl. 454, f. 1) which ordinarily bears this name among collectors should ever have been selected as the representative of the Linnean species is surprising; for not one of the twelve figures referred to as illustrative correctly exhibits its well-known features. A most contradictory synonymy, which comprised half as many species as references, accompanied the utterly insufficient description of the tenth edition of the 'Systema.' Among the shells there indicated may be specified *Nerita Malaccensis* of Lamarck (Petiver), *N. costata* (Argenville), *N. Listeri* of Récluz (Lister: the section quoted should have been 6, for 1 contains the perforated limpets), *Neritopsis radula* (Rumphius; the unquoted figure 3 of the same plate exhibits the Lamarckian *exuvia*), &c. The first of these has been selected by Dillwyn, Deshayes and Récluz as the representative of the Linnean species; an identification supported by the circumstance that it (Knorr, Dél. Yeux, iii. pl. 1, f. 5) is the only one of the *Nerites* just mentioned which is present in the cabinet of Linnæus (who has recorded his possession of an example), and by the "Color ater albo undulato lineatus" of his manuscript. A careful perusal of the description in the 'Museum Ulricæ' leads to the same conclusion. For although the *N. exuvia* of Lamarck agrees in most respects with the details there specified, it does not correspond with "nigricans—undatis lineis transversis (i. e. concentricis) albidis;" his *Malaccensis*, on the contrary, answers alike to that passage, and to the remainder of the description. This perfect accordance can be affirmed of no other species of the many grouped together by the synonymy; such an identification, moreover, accounts for the erroneous reference to Lister and Argenville, whose engravings exhibit the blackness and coarse ribbing characteristic

of *Malaccensis*, and involves the less confusion in nomenclature, from the fact that the shell so named by Lamarek was essentially distinct from the one previously so designated by Chemnitz. It is not improbable, however, that the “*Varietas alba, maculis nigris tessellata*” of the ‘Museum’ was the *textilis* of the ‘Animaux sans Vertèbres.’

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## HALIOTIS.

Considerable stress has been laid, in the ‘Museum Ulricæ,’ upon the total number of “foramina,” and the relative proportion of closed and open ones, characters which, however useful as an auxiliary means of separating two closely allied congeners, only mislead when carried to that extent and arbitrary limitation of number displayed in such passages as “Foramina 30, quorum 6 seu 7 pervia.” The relative size, distance, shape and elevation of these little knobs form valuable characters for specific distinction; the mere number of those pervious or sealed up depends, in a great measure, upon age and the accidents of growth. Consequently, in granting the accordance of the descriptions in the ‘Museum Ulricæ,’ these features have not been taken into account.

### *Haliotis Mida.*

This shell has hitherto been solely determined from the cited figure of Gualtier, which represents the *Haliotis Mida* of authors, a species not directly opposed in features to the peculiarly meagre definition. The expression “*utrinque nitida*” is supposed to have been derived from an artificially polished specimen. The preservation of many examples of that well-known shell (Knorr, Dél. Yeux, pt. 5, pl. 20, f. 3) in the Linnean

cabinet, and the reference (" Mart. Syst. 177, t. 14, 15, f. 136, 141) in the revised 'Systema' to acknowledged delineations of it, corroborate the received opinion, to which the details in the 'Museum Ulricæ' are not adverse; indeed, the "rugosa" of that publication corrects the idea of a fancied smoothness, which might otherwise be conceived from the absence of indicated sculpture in the 'Systema.'

### *Haliotis tuberculata.*

The traditional *Haliotis tuberculata* must have been determined as such from the European locality and the great preponderance in the synonymy of figures of that shell; certainly not from any peculiar and especial correspondence of its features with those specified in the brief descriptions. One might have expected from the antithetical diagnosis of this and the succeeding species that the present was devoid of longitudinal (spiral) striæ, and was solely distinguished by transverse (radiating) rugose tubercles, yet the former were clearly delineated in several of the illustrative figures (Bonanni, Lister Angl. &c.); in some (Adanson, &c.), indeed, to the exclusion of the transverse ones. Many shells (*Iris*, *Australis*) in the Linnean cabinet would suit the description better than our indigenous species does; but no representation of any such is to be found among the references. Hence as the meagre description (even the longer account in the 'Museum Ulricæ') was wholly insufficient to indicate with certainty what our author intended, it is not expedient, especially as many specimens (Da Costa, Brit. Conch. pl. 2, f. 1) of the *Haliotis tuberculata* of authors are preserved in the Linnean cabinet, to alter without absolute necessity a traditional identification. As no member of the genus has been enumerated in the Scandinavian shell-lists of Lovén or Asbjørnsen, it is not improbable that the example of the 'Fauna Suecica' was of foreign origin.

The rude drawing of Rumphius widely differs from the other engravings referred to, and must not be quoted in an harmonious synonymy. One feels surprised that Regenfuss (pl. 10, f. 40) was not referred to.

## *Haliotis striata.*

It is about as difficult to ascertain what was the *Haliotis striata* of the older writers as to discover what shell our author intended without examination of his collection. Martini's figure (Conch. vol. i. pl. 14, f. 138) of this *Ear-shell*, accepted as a correct representation of the Linnean species by Schröter, Dillwyn, and other writers of the older school, reminds one greatly of the preceding species, and seems different from both the one described as such by Deshayes in the 'Encyclopédie Méthodique' (Vers, vol. ii. pt. 2, p. 180), which seems identical with the shell figured in plate 9, f. 3 of Humphreys' Conchology, and is perhaps the *H. virginica* of Reeve, and the *Haliotis* delineated (vol. iii. Hal. f. 58) as *striata* in the 'Conchologia Iconica' of the last-named writer. All these three, however, are alike destitute of that important feature "transversim rugosa," for the transverse "rugæ" of Linnæus are, in this genus, at least (as we know, from his account of *Midæ* in the 'Museum Ulricæ'), projecting lamellar radiating folds, and not merely slight wrinkles; moreover, the spiral striæ ("longitudinales secundum anfractus") are declared in the M. U. to be fine in comparison with the "rugæ." Now the specimens preserved in the box marked for this species in the Linnean cabinet exactly fulfil these conditions, and solely of those present, unless, indeed, some individuals of the two preceding shells should be excepted, exhibit the combined sculpture. They seem precisely identical with the very variable *Ear-shell* of Barbary and Southern Europe, the *H. lamellosa* of Lamarck (Deles. Rec. Coq. Lam. pl. 33, f. 7), and display the characteristics ascribed to *striata* in both the 'Systema' and the 'Museum Ulricæ.'

## *Haliotis varia.*

The *Haliotis varia* of authors (Mart. Conch. Cab. i. pl. 15, f. 144) is preserved in the box marked for this species in the

Linnean cabinet, and an excellent figure of it, "Mart. Syst. 183, t. 15, f. 144," has been referred to as illustrative in the revised copy of the 'Systema.' The examples agree fairly with the description of the species in both the 'Systema' and the 'Museum,' unless possibly the "*spira humilis*" of the latter should be considered objectionable.

### *Haliotis marmorata.*

Not only is the account of this species in the 'Systema' most unsatisfactorily brief, but even the details in the 'Museum Ulricæ' are inordinately scanty. The illustrative figure in Argenville is too ill executed to be recognisable, and, moreover, exhibits no vestiges of the "*striis longitudinalibus*" of the diagnosis. It is not very easy, either, to identify Martini's ideal of this *Haliotis* (perhaps for want of specimens); his painting (Conch. Cab. i. f. 139), apparently taken from a cut specimen, does not exactly resemble any of those in Reeve's Monograph of the genus, yet reminds one in many respects of *rosacea* and *virginea* (distinct?), an example (Humph. and Da Costa, Conch. pl. 9, f. 3) of the latter of which is preserved in the cabinet of Linnæus (whose son has affirmed the presence of *marmorata* in the collection of his father), and corresponds more aptly with the description in the 'Systema' than any other object there present. Mörch has suggested the probability of this identification (Cat. Conch. Yoldi). I am far from urging the adoption of the Linnean appellation on this account, for in truth the species was too inadequately defined for any assured recognition.

The older conchologists (Kümmerer, Bolten, Gmelin, Dillwyn) had apparently fixed upon a shell which they regarded as this, and for which they unanimously cited Martini, f. 139, and Knorr, ii. t. 17, f. 4, 5, as illustrative; the rest of their synonymy is for the most part so contradictory, that it becomes difficult to decide what they intended under this appellation. Schröter has so boldly charged Linnæus with particularising accidental and omitting essential features, that one naturally doubts whether the specimens he has described belonged to the species; they seem to have been some such shell as the



*Janus* of Reeve. The *H. marmorata* of the last-named writer was not published as that of preceding authors, but as of Gray's MS.

### *Haliotis asinina.*

The *Haliotis asinina* (Reeve, Conch. Icon. vol. iii. Hal. f. 18) of authors is present, as recorded, in the Linnean cabinet, and alone of its contents agrees accurately with the description in the 'Systema.' The revised copy of that publication has been enriched by the additional references of "Mart. Syst. t. 16, f. 150" and "List. 610," which, as well as those published, were correctly cited.

### *Haliotis parva.*

Although unillustrated by any pictorial reference, the very peculiar feature of an externally raised canal has enabled naturalists to identify this species with certainty. For although a similar canal may be found in *rubicundus*, *Emmæ*, and less conspicuously so in *lauta*, it cannot be said in the latter to be "elevatus major et evidentior illo qui foramina gerit" (M. U.), nor can the much-raised "foramina" of the two former be termed "vix prominentia" (M. U.). Hence, as the *Haliotis parva* of authors (Knorr, Dél. Yeux, pt. 1, pl. 20, f. 5) exclusively displays the required characteristics, no hesitation need be felt in accepting it as the representative of the Linnean shell. It has, however, received many appellations. Lamarck erroneously changed the name to *canaliculata*, notwithstanding his own belief that it was the *parva* of Linnæus; Bolten has called it *cingulata* and *rubicunda*; Swainson, in the 'Bligh Catalogue,' has described it afresh as *H. carinata*. The absence of examples in the Linnean cabinet is rather confirmatory than not of the established identification, since the species was not recorded to have formed part of our author's collection.

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## PATELLA.

### *Patella equestris*.

This shell was so clearly defined in the tenth edition of the 'Systema' that it has proved by no means difficult to recognise it; since all the figures quoted as illustrative (and Gualtier's delineation is very characteristic) represented the *Calyptræa equestris* of Lamarck (*P. Neptuni* of Dillwyn), the features of which are not opposed to the description.

Four perfectly distinct species were enumerated as varieties in the 'Museum Ulricæ'; *a*, "lamellis horizontalibus imbricatis" (*Cal. tectum Sinense*); *b*, "rugis transversalibus" (*C. Dillwynii*, Gray, the *P. equestris* of Dillwyn, a W. Indian *Cup-limpet* with an undulatingly indented surface, and almost invisible striulæ); *g*, "striis longitudinalibus inferne denticulatis" (*C. equestris, proper*); *d*, "rugis transversalibus—Pet. Gaz. t. 21, f. 11." (*C. extensorium*, Desh. ed. Lam. Anim. s. Vert.)

The "extus perfoliata" of the twelfth edition applies solely to the variety *a*, which is the only one of the four absent from the Linnean collection, where the markings have only been preserved upon the variety *d* (List. Conch. t. 546, f. 39). The specific name should, however, be retained, on the score of priority, for the *Calyptræa* thus designated by Lamarck.

### *Patella Neritoidea*.

The type of this species, which our author did not himself possess, must be sought for in the Royal Museum; a description of it appeared in the 'Museum Ulricæ,' which was exclusively referred to in the principal editions of the 'Systema.' From the absence of any pictorial synonym, the shell, although the specified characteristics are very striking ("labium

rubrum," &c.), has never been identified with satisfactory clearness; the recognition of it by Walch and Meuschen, in the 'Naturforscher,' was proved to be erroneous by Schröter, who has himself cited no less than six engravings as illustrative, yet appended a note of interrogation to each of his references. This uncertainty, in which he was followed by Gmelin, who has generally accepted his conclusions and copied his synonymy, was a necessary consequence of the meagreness of detail displayed in the Linnean description.

Two very dissimilar shells have been suggested as its representative, the *Neritina crepidula*, var. *violacea*, and a *Crepidula* delineated by Favanne, plate 4, figure E, 2. The latter has been proposed in the 'Journal de Conchyliologie,' but I suspect did not represent the species there designed, for it is declared in the text to be of an uniform brown tint, and not white with a red plate, as asserted by Récluz. The former has been doubtfully proposed by Martini, whose painting "t. 13, f. 133, 134," possibly in default of a more characteristic engraving, has been quoted by Linnæus in his revised 'Systema.' The account in the 'Museum,' where, by-the-by, the "lateralis" of the diagnosis was misprinted "ovali," would be applicable only to a bleached or eroded individual.

## Patella Chinensis.

The *Calyptrea levigata* of Lamarck (Deles. Rec. Coq. Lam. pl. 25, f. 3) is marked for this species in the Linnean cabinet. This might have been surmised from the language of the 'Museum Ulricæ,' the figure of Bonanni, and the Mediterranean locality. The reference, however, to the engravings of Argenville and Lister threw doubt upon that determination; for although those drawings are not so dissimilar in outline to *Chinensis* proper, the words that accompany them, "une pointe saliant et repliée dans son sommet interieur" (Arg.) and "stilo quodam interno—maculis quibusdam spiralibus" (List.), are far more applicable to *C. extensorium* than to an uniformly white shell, with a spiral plate in its interior. The modern equivalent ("t. 546, f. 39") of this reference to Lister was cited, indeed, in the revised 'Systema' for *P. equestris*, of which it

represents the form *d* of the 'Museum Ulricæ.' Linnæus may readily be pardoned for having misquoted these drawings for a species distinguished by its "labio laterali," from the circumstance that they were dorsal views, and consequently did not display the characteristic funnel of the interior.

### *Patella porcellana.*

A marked example (Enc. Méth. Vers, pl. 456, f. 1) of this shell, the *Navicella elliptica* of Lamarck's 'Animaux,' is still preserved in the Linnean collection, and corresponds admirably, not merely with the few words of the diagnosis, but likewise with the fuller description in the 'Museum.' The cited drawing of Rumphius has been generally referred to *elliptica*, yet does not exhibit the characteristic painting so graphically portrayed in the following passage of the 'Museum Ulricæ:': "maculis albis conicis imbricatis, superficie lineolis cæruleis transversis undatis."

### *Patella fornicata.*

Plate 53, f. 8, of Petiver's 'Gazophylacium,' and figures 129, 130 of Martini's 'Conchylien Cabinet' have been inserted as additional references in the revised copy of the 'Systema.' These drawings fairly enough represent the marked examples of the collection (in very poor condition), which prove to be the *Crepidula fornicata* of Lamarck, and demonstrate that naturalists had rightly divined the species intended by Linnæus. The engravings of Lister and Adanson were only added to the synonymy in the twelfth edition of the 'Systema;': they are generally supposed to represent the allied congener *C. porcellana*. The preferential, though mistaken, reference of them to the present shell should have deterred Lamarck from his erroneous identification of the preceding species. The locality was taken from Gualtier, whose figure of the preceding shell had been doubtfully quoted for this in the tenth edition of the 'Systema.'

## ***Patella crepidula.***

The typographical error that excludes this shell from the section provided with an internal appendage did not pass unnoticed by Linnæus, who has written “hæc ad primam divisionem pertinet” in his own copy of the ‘Systema.’ The *Crepidula unguiformis* of Lamarck (Humphrey’s Conch. pl. 6, f. 3) is marked for this species in his cabinet, and correctly answers to his description, and to the cited figure of Gualtier, from whose publication the specific name was derived. The reference to Adanson must be expunged; his engraving represents the type of a very different genus, the *Sormetus* of Blainville.

## ***Patella laciniosa.***

Figure 81 of Martini’s ‘Conchylien Cabinet’ has been referred to, as an additional synonym, in the revised ‘Systema,’ and as both this and the published references have been also cited for the *Patella laciniosa* of Gmelin, Lamarck, and Dillwyn, it may be presumed that the species of these four writers was identical. The last-named conchologist, who has likewise quoted certain drawings of Favanne and Petiver that were evidently taken from the cited engravings of Argenville and Rumphius, has thus commented upon the subject: “The species appears to me to rest almost entirely on the authority of Rumphius, from whose figure the others have probably been copied.” A careful comparison of these illustrations leaves no doubt of the correctness of this conclusion; the species, of which Linnæus has not recorded his possession, was apparently constituted solely from these drawings, and pictorially defined by them. I have not, however, been so fortunate as to descry any specimens that I could unhesitatingly identify with them, and confess, with Schröter, my ignorance of the shell they were intended to represent.

### *Patella saccharina.*

It matters little that no specimens can be discovered in the collection of Linnæus which alike suit both his description and synonymy of this limpet, since naturalists have almost universally selected as its representative the shell (*Patella saccharina* of Lamarck, figured in List. Conch. 532, f. 10) delineated in the majority of the cited engravings. Among these, however, Gualtier's must be reckoned a doubtful representation.

From the passage "radiis 7, ad 11—interjectis dentibus 7 minoribus alternis" in the 'Museum Ulricæ,' one is led to suspect that the species so designated in that publication was either an extreme variety or essentially distinct. It may possibly, indeed, have been the former, since individuals are occasionally met with that have alternating finer riblets, and although the decided ribs more frequently amount to seven only they are not absolutely limited to that number.

In the revised 'Systema' "532, f. 10" has been substituted for the previous circuitous mode of referring to Lister's 'Historiæ,' a style necessary, indeed, from the absence of numerals upon the plates of the earlier edition of that valuable iconography, but apt to mislead, since the copper-plates are known to have been arranged variously in different copies, and, being so small that several were inserted in the same page, have been sometimes reckoned as component parts of one large "tabula."

### *Patella barbara.*

Marked examples of this shell (Humphrey's Conch. pl. 4, f. 16, admirably) are still preserved in the Linnean cabinet, and answer adequately to the published description. They are identical with the *Patella spinifera* of Lamarck, as figured by Delessert, of which I regard the *Cypria* of Gmelin (Martini, Conch. i. pl. 9, f. 79) and the *barbata* of Lamarck to be mere varietal forms.

The expression “fornicato—muricatis” is peculiarly appropriate for the ribs of this limpet, which, although varying greatly in shape, since, although habitually depressed, it sometimes displays a peculiarly elevated contour, invariably exhibits the characteristic vaulted spines.

In his own copy of the ‘Systema’ our author has quoted plate 9, f. H of Gualtier, and plate 126, f. 8 of Petiver’s ‘Gazophylacium.’ Both these engravings communicate the general idea of the species; neither, however, I suspect, was actually designed for it: the former reminds one of the shape, but not of the spines; the latter (copied from Columna, Aquat.) of the spines, but not of the shape.

### ***Patella granularis.***

The specimen (List. Hist. Conch. pl 536) inscribed with the numerals indicative of this shell in the Linnean collection belongs to the species which has been recognised for it, and thus designated by Lamarek and the modern conchologists. The cited painting of Regenfuss represents the shell; so, too, does figure 61 of Martini (Conch. Cab. i.), which has been added to the synonymy in the revised ‘Systema,’ where “List. 536,” in lieu of the former reference “t. 3, f. 2,” shows that our author meant the second copper-plate of the third page of engravings, not the second figure upon the third copper-plate of the quoted chapter. His habitual carelessness is evidenced in his citation of Gualtier, whose drawing represents the next species; the G and the H of Argenville, also, correctly quoted for *granatina* and *granularis* in the tenth edition, were erroneously transposed in the final one.

### ***Patella granatina.***

The synonymy of this limpet, as it stood in the tenth edition of the ‘Systema,’ was perfectly correct; hence the universal recognition of the species as the *Patella granatina* of modern conchology. A specimen of it (Regenf. pl. 9, f. 31), with the

significant numerals partially erased, is still preserved in the cabinet of Linnæus, who has corroborated the established opinion by his citation of figures 71, 72 of Martini (vol. i.) in his revised 'Systema,' where, likewise, "534" has been substituted for its longer equivalent. The ascribed localities of this and the preceding shell are inaccurate: they are natives of Southern Africa. The "testa lutea, striarum mucronibus albis" is more applicable to *granularis*, and formed no portion of the original description: the colouring was more correctly depicted in the 'Museum Ulricæ.'

### *Patella vulgata.*

The marked individuals (List. Conch. pl. 535, f. 14) in the typical collection both demonstrate that the common limpet of our own shores has been rightly identified with the *vulgata* of Linnæus, and explain the "angulis quatuordecim obsoletis" of the description. For in several of the specimens certain of the raised striæ, which are not, as in the majority of adult British examples, of equal magnitude throughout, are preeminently elevated, a character which, however true of individuals, is not essential to the species. As the paucity of *Testacea* indigenous to the North of Europe naturally facilitates their determination, the reference to the 'Fauna Suecica,' aided perhaps by the abundance of the shell, effected that recognition which would scarcely have resulted from the perusal of the 'Systema.' For not only was the description in that work utterly inadequate for the purpose of definition, but even two (Gualt. pl. 8, f. L, and Ginanni) of the three figures that were cited as illustrative, were designed, in all probability, for the *P. cærulea*, a very closely allied Mediterranean congener. Gualtier, plate 8, f. Q, quoted in the tenth edition of the 'Systema,' but eventually discarded from the synonymy, although not so unlike *vulgata*, was apparently copied from part 1, figure 4, of Bonanni's 'Recreatio;' it is there stated to be "Indica."



### *Patella cærulea.*

The *Patella cærulea* of Lamareck and Philippi (Martini, Conch. Cab. i. pl. 8, f. 64; pl. 10, f. 85, tolerably) is marked for this shell in the Linnean cabinet (plate 5, f. 9). The *P. scutellaris* of Philippi (not of Lamareck), another form of this abundant and variable limpet, was included by our author in the species; specimens of it are inscribed with the same numerals. It seems passing strange that naturalists should have successfully determined an unillustrated species defined by four characters alone; but the appended locality (for once correct) limited greatly the number of objects to be selected from. The revised 'Systema' refers us to plate 9, figures D, G of Gualtier's 'Index,' drawings which, if not designed for *cærulea*, nevertheless exhibit its general aspect.

### *Patella tuberculata.*

In default of an adequate description, for even that in the 'Museum Ulricæ' is very brief, and in the absence of any pictorial synonym, it has proved impossible to ascertain, with positive certainty, what limpet was really designed by Linnæus. Conchologists have either omitted it altogether from their lists, or have candidly acknowledged their inability to recognise it. Gmelin has merely abridged the original scanty details: Lamareck has queried it for his own *P. tuberculifera*, but that shell does not even possess the very few features that are required in *tuberculata*.

The words of our author appear to harmonise better with certain specimens of *Emarginula tricostrata* (*Pat. octoradiata*, Gmelin, in part; List. pl. 532, f. 11), which exhibit the colouring, nodosities and terminal bluntness that are attributed to the shell in question. No positive identification, however, can be established upon a basis of conjecture, for however precise may be the agreement, the shortness of the description permits not the hope that it will correspond with any one shell exclusively.

It is much to be regretted that Linnaeus did not himself possess the species.

### **Patella Hungarica.**

The *Pileopsis Hungarica* of modern writers (Sowerby, Genera Shells, Pil.) is marked for this species in the Linnean cabinet. In the revised copy of the 'Systema' "Mart. Syst. t. 12, f. 107, 108" has been added to the references, and "hæc habet epidermidem" appended to the description. The published synonymy, although it served, when combined with and modified by the description, to indicate the species actually intended, was, nevertheless, somewhat faulty. For Klein's cited drawing, which, from its rudeness, might pass equally well for *P. Hungarica*, was copied from Lister's representation (Hist. Conch. pl. 544, f. 32) of *P. intorta*; and Ginanni's figure, although probably designed for the shell, was very inaccurate.

### **Patella antiquata.**

The *Pileopsis (Hipponyx) mitrula* of Lamarck (Martini, Conch. Cab. i. pl. 12, f. 111, 112, copied from Lister) is marked for this species in the Linnean cabinet, and perfectly agrees with its description. It was recognised for the *P. antiquata* by both Montagu and Dillwyn, although its diagnosis was not illustrated by any pictorial synonym, an omission rectified in our author's copy of his 'Systema' by the citation of "List. t. 544, f. 31." The locality "Barbadoes" is correctly stated in the manuscript of the younger Linné.

### **Patella mammillaris.**

As our author has recorded his possession of this limpet, and one shell alone of the entire Linnean collection adequately agrees with the description of it, that example is manifestly entitled to be considered the typical *mammillaris*. It was

placed in the same little box with the preceding species (which was the usual way with Linnæus, when two small species followed in succession), but wrapped up separately from it. The specimen alluded to (plate 4, f. 11) belongs to the *Gadinia Garnoti* of Philippi's 'Molluscorum Siciliæ' (vol. ii. p. 85), but is more *Pileopsis*-shaped than Payraudeau's drawing of that Mediterranean limpet. This was probably also the *Patella mammillaris* of Lamarck, but the individual possessed by the latter was, I believe, a worn or polished one. The cited figures bear much resemblance to the shell, yet were not designed to represent it. For Klein's engraving was copied from Lister, who has delineated a peculiarly round form of the *Mouret* of Adanson, which suits not the "conica—subdiaphana" of the diagnosis. The stated locality is correct.

### *Patella tricarinata.*

The specified characteristics of this shell are so peculiar, that, although no cited engraving directs our attention to the general aspect of the object intended, its identity with the *Patella tricostrata* of Lamarck and Chemnitz (Conch. Cab. x. pl. 168, f. 1622, 1623), as suggested by Deshayes, can scarcely be questioned: no other known shell so perfectly accords with those remarkable features ascribed to it. Nothing can be found in the Linnean collection that will correspond with the account in the 'Systema,' the revised copy of which has "Apex recurvatus" in lieu of the expression "Spira recurva."

### *Patella pectinata.*

Those who have sought to identify this limpet with the *Patella intorta* of the English conchologists, which is semi-transparent, with an almost lateral apex, have neglected the expressions "opaca" and "vertice subcentrali." The *Siphonaria Mouret* (*Le Mouret*, Adans. Seneg. pl. 2, f. 5; the *Patella grisea* of Gmelin) is marked (plate 4, f. 12) for this species in the Linnean cabinet, and corresponds with the characteristics and the assigned locality. That shell, indeed, had been indicated

in the earlier issue of the 'Systema,' where the species was pictorially defined by a reference to Klein's drawing ("t. 8, f. 1") of it. His rude engraving, copied from plate 537, f. 17, of Lister's 'Historiæ,' cited, as illustrative, in the manuscript of our author, had been, likewise, quoted by Linnæus for his *P. mammillaris*, a shell whose contour more closely resembles it than the ordinary shape of *P. pectinata*; this circumstance, in all probability, caused its exclusion from the synonymy of the twelfth edition.

### *Patella lutea.*

The cited figure of Rumphius represents the interior of an irrerecognisable species of *Stomatella*, which exhibits the general aspect of *striatula* or *auricula*: the latter has been preferentially selected by Adams as the representative of the Linnean *Patella*, and termed by him *Gena lutea* in his Monograph of the *Stomatellinæ*. The "striata" of the diagnosis contrasts too strongly with the "lævigata" of the English conchologist to permit the possibility of such an identification: a nearer correspondence might be urged in favour of *striatula*. Martini, whose recognition, evidently based upon the figure of Rumphius, has been generally adopted, has delineated for it a very dark-coloured *Stomatella*, which combines the produced shape of *planulata* with the dusky painting of *nigra*. Yet no member of that genus bears the slightest resemblance to the upper valve of *Anomia Patelliformis*, to which *lutea* has been likened in the 'Fauna Suecica,' and the expressions "mucronato, reflexo" are not peculiarly appropriate for the spiral apex of a *Stomatella*. The vertex of the *Patella lutea* of Born's 'Testacea' is sub-central, in place of submarginal, as required, a discrepancy commented upon by Schröter, who has, likewise, expressed his doubts as to the illustrative authority of the engraving of Rumphius. In this suspicion I am inclined to concur, since, although the Dutch publication had been habitually consulted, from the first, by Linnæus, he made no reference to that figure, nor to the Indian habitat, until the final edition of his 'Systema:' it may be presumed, then, that the likeness was not very striking; indeed, such is the rudeness of the reversed

drawing that it might readily have been taken for a narrow depressed limpet with a submarginal vertex and a simple edge. Assuredly it did not represent the minute species of the 'Museum Ulricæ' described as being "magnitudine seminis peponis;" the brief account in that work (referred to even previous to its issue) reminds one more of such a limpet as the *Pilidium fulvum*; but, in truth, the unillustrated definition was too meagre to enable naturalists to arrive at any logical conclusion. The name is not inserted in the final list of *Testacea* possessed by our author.

### ***Patella unguis.***

The reference in the 'Systema' to the utterly dissimilar drawings of Petiver and Rumphius, the former of whom has portrayed a *Lingula* (which more precisely corresponds with the "vertice mucronato, carinato"), the latter a *Parmophorus* (which agrees far better with the "margine antico retuso"), would have left us in doubt as to which of the two shells, if either, was preferentially entitled to the specific appellation, had not the language of the 'Museum Ulricæ,' where the objectionable synonym of Petiver was omitted, definitely settled the question. It was, probably, from a perusal of the details mentioned in that valuable publication that Schumacher correctly decided that the *Patella unguis* of Linnæus belonged to the genus elsewhere termed *Parmophorus*; one (N. Syst. Vers Test. pl. 22, f. *d*, *e*) of the two species depicted by him as illustrative very fairly represents the marked type (pl. 3, f. 4) of the Linnean collection. No *Lingula* is present in the cabinet.

### ***Patella cristata.***

This rare and costly shell was not possessed by Linnæus, whose mention of the noted collection which it graced has alone enabled us to recognise the object thus designated. For although no pictorial illustration has been referred to by our author, Argenville, in his Appendix (pl. 1, B), has, fortunately for conchology, delineated the celebrated typical example in

Lyonnet's cabinet at the Hague: his figure has been copied by Martini (Conch. Cab. i. f. 163), and by Da Costa and Humphreys (pl. 4, f. 19). It seems passing strange and unnatural that the delicate *Carinaria* there represented (the *C. vitrea* of the Lamarckian arrangement, judging from the synonymy) should not have been placed with the graceful *Argonauts*, rather than with the rude *Patellæ*; yet the shape is not dissimilar to that of *P. tricarinata*, and from the name "Brunnich" being attached to the description, the account of it was, in all probability, communicated by that party, and not drawn up by Linnæus himself from personal examination of the specimen.

### *Patella lacustris.*

Notwithstanding the "ovali" declared of this shell in both editions of the 'Systema,' as well as in both editions of the 'Fauna Suecica,' and that harmonious correspondence of the cited engravings with the description which clearly defined the species, Müller, whilst correctly appreciating the synonymy, which he has duly attached to the *Ancylus* designed by Linnæus, has, nevertheless, termed the latter *fluviatilis*, and transferred the epithet *lacustris* to its greatly elongated congener *oblongus*. His example, unfortunately followed by Nilsson, Draparnaud, Lamarck, and by most of the Continental naturalists, has not misled Dillwyn nor the majority of our native conchologists.

An examination of the cabinet of Linnæus, who has recorded his possession of an example of the species, supports the opinion of our English writers, since the *A. oblongus* is not contained in it, and of the *Ancyli* there present, the *fluviatilis* of Müller (Gray, Manual L. and F. W. Shells) alone corresponds with the definition. In the revised copy of the 'Systema' "List. 141, f. 39" has been added to the published synonymy.

### *Patella pellucida.*

The *Patella pellucida* of British writers is marked (Brit. Mollusc. pl. 61, f. 3, but the marked individual has lost its

rays) for this species in the Linnean collection, and alone of the shells there present agrees with its description in the 'Systema.' In a copy of the latter which belonged to the younger Linné, plate 547, f. 27 of Lister's 'Historiæ' has been accurately cited as illustrative.

### ***Patella testudinaria.***

An example (Knorr, Dél. Yeux, pt. 1, pl. 21, f. 1, but smaller) of the *Patella testudinaria* of authors is accompanied, in the cabinet of Linnæus, by a paper inscribed "List. 531," which may be regarded as almost equivalent to the indicative numerals of the species, since the engraving thus referred to was one of those correctly quoted, as illustrative, in the published synonymy. That limpet, moreover, which has long been recognised for it, through the cited engravings and the enlarged description in the 'Museum Ulricæ,' is the only one in the collection that aptly corresponds with the definition.

The modern style of reference to Lister ("531") has been adopted in the revised copy of the 'Systema Naturæ.'

### ***Patella compressa.***

The shell (List. Hist. Conch. pl. 541, f. 25) marked for this limpet in the Linnean collection is the one which has been similarly designated by modern conchologists. Although no illustrative drawing facilitated the identification, the peculiar pinched-up shape of the *Patella* attracted notice, and caused its early and universal recognition. The reference to Lister attached to the succeeding species was, I suspect, a typographical error, since the engraving there cited proves a by-no-means inaccurate delineation of the present shell.

### ***Patella rustica.***

The *Patella* thus marked in the Linnean collection is the *punctata* of Lamarck (Payraudeau, Moll. Corse, pl. 3, f. 6, 7, 8,

tolerably well), a Mediterranean shell that agrees with the description in the 'Systema,' and with the cited figure P of Gualtier's folio; the queried C of the same publication, though rather an ambiguous portraiture, recalls to mind the aspect of the species, and may have been engraved from a worn example. A very different limpet, with blunt ribs in place of raised narrow striæ, and of great magnitude ("caput infantis superans") was subsequently described in the 'Museum Ulricæ;' but the definition of it was so imperfect that Menke (Nov. Holl.) and Reeve (Conch. Icon.) have selected two utterly dissimilar shells as its representative.

### *Patella fusca.*

To identify the *Patella fusca* of Linnæus, from so meagre and unillustrated an account as he has furnished us with, was so hopeless a venture that most naturalists have either contented themselves with reproducing the original description or have passed by the species in silence. Born and Dillwyn, however, fancied that they had detected the features of it in the *P. Magellanica*, a limpet which, as Schröter has justly remarked, differs widely in characteristics from those specified in the 'Museum Ulricæ.' Even the "striis elevatis" of the single line of description in the 'Systema' would not be appropriate; and assuredly the "cinereo—nigricans, radiis tenuissimis filiformibus cinereis" (M. U.) is utterly opposed to its peculiar colouring.

The marked example (plate 4, f. 9) in the cabinet of Linnæus enables us to say what species was recognised by Linnæus himself as the *Patella fusca*. The specimen alluded to is that variety of the *P. argentea* of Quoy and Gaimard that is devoid of all marbling, and is merely adorned with depressed striæ-like black ribs. It agrees with the language of the 'Systema,' but does not exhibit the "vertex ferme centralis" of the 'Museum' details. Since the species was never adequately defined, no claims of precedence can be grounded upon the mere preservation of the original specimens.



### *Patella notata.*

A marked example of this shell is still preserved in the Linnean collection. It proves to be (as was surmised, despite the incorrectness of the stated locality, and the entire absence of any illustrative synonym) the *Emarginula notata* of Reeve's 'Conchologia Systematica,' pl. 140, f. 3.

### *Patella cruciata.*

The type of this species must be sought for in the Royal Museum, not in the cabinet of our author, who did not possess an example himself, but from the first referred us to the 'Museum Ulricæ' for a more detailed account of its characters. Schröter, by the aid of that publication, has essayed, and I think successfully, to identify it with the limpet delineated by him, under that name, in his 'Einleitung in die Conchylien-kentniss' (ii. p. 432, pl. 5, f. 6). His engraving very fairly represents a scarce *Acmea*, which, not having been described at large in any subsequent work (it totally escaped the notice of Lamarck), and the original account being in German, a language rarely intelligible to our English conchologists, I have thought desirable to redescribe from specimens in my own collection.

*ACMÆA CRUCIATA, Lin.*—Shell oval, moderately solid, varying in elevation from subdepressed to subconical, usually found smooth, but rayed in fresh and perfect individuals with very fine raised striæ. Colouring rather variable, yet almost always exhibiting a more or less cruciform arrangement; when most characteristic, displaying four broad white rays upon a white speckled ground of blackish brown that are usually bisected, as they spread, by a short dark streak which at times becomes so broad as to produce the appearance of there being eight narrow white rays, or of a cross with white edges and a brown centre: occasionally, too, there are narrower interstitial rays besides. Apex blunt, yet prominent, always white both within and without, placed at rather more than one-third the space

from the narrower end. Interior with a faint central brown spatula-shaped stain, intersected by the external rays, which appear more or less visibly through the very thin white glaze that lines the rest of the cavity. Length three-fourths of an inch; breadth half an inch. Worn individuals exhibit a brown cross upon a white ground.

### *Patella reticulata.*

Schröter, who studied the limpets with much perseverance, appears to have been the only original writer who has confidently suggested a species as the representative of the Linnean *Patella*. His supposed recognition was of course accepted by Gmelin, who has closely followed his views in the nomenclature of the limpets, and has bestowed Latin specific appellations upon the many varieties enumerated by Schröter, in his 'New Litteratur,' &c. Yet brief and indefinite as was the description of Linnæus, it nevertheless specifies a striking peculiarity, "superficies intertexta fibris gibbis reticulatis horizontalibus et perpendicularibus albis," that can be discerned in few, if any, of the *Patellidæ*, and assuredly not in the object delineated by Schröter. His engraving, which reminds one of some such shell as the *Hipponyx radiata*, does not exhibit the vein-like network attributed to the surface of *reticulata*, but merely a blunt radiating costellation: his shell, moreover, is stated to be wholly white, a hue attributed to the raised sculpture only (as if in contradistinction to the ground-colour) in the species of Linnæus.

The identity of the two shells cannot consequently be regarded as an established fact, since nothing but the most perfect agreement in all particulars could prove it, in the absence of any illustrative synonym as corroborative evidence. Were, indeed, conjecture allowable, one would rather suggest the Sicilian *Pedicularia* for its representative; but the ambiguity which involves it can only be dispelled by an examination of the typical specimens in the Dronningen Museum. Our author did not himself possess an example.

## **Patella fissura.**

The brief description of this shell would apply to almost any *Emarginula* the synonymy to the *E. reticulata* of our own coast exclusively, and, as the features of that limpet (the *Patella fissura* of the earlier British writers) are not opposed to the stated characteristics, the species may be regarded as pictorially defined. It is probable enough, as Récluz has remarked, that the Algerine specimens belonged to the *E. cancellata* of Philippi, of which an example (Moll. Sicil. pl. 7, f. 15) is present in the Linnean cabinet; it is not, however, abundant at Algiers, for I did not procure one individual during my sojourn in Barbary. The expressions “vertice reflexo” and “fissura linearis a latere antico ad lateris medium” are, indeed, peculiarly appropriate for that beautiful shell (said to be the *E. fissura* of Lamarck’s cabinet), yet as the slit, properly speaking, does not extend to the middle in mature examples of either limpet, and the reflection of the summit is apparent in all but the more aged forms of *reticulata*, there is no necessity for depriving our British shell of that appellation to which it was entitled by the published synonymy. As the name, however, alludes to a character common to every member of the genus, it is now generally disused; consequently, in referring to the *Patella fissura* of Linnæus, one may distinguish the two confused species as “var. Brit.” and “var. Alg.”

## **Patella pustula.**

It is usual to identify this key-hole limpet with the *Fissurella pustula* of Lamarck (List. Conch. pl. 528, f. 3), which, indeed, is present in the Linnean collection, but is neither marked as such nor accords with the described features. The addition to the synonymy, in the twelfth edition of the ‘Systema,’ of Petiver’s representation of that shell, was doubtless the source of the mistake; for mistake it certainly must be to recognise a rose-tipped species, with only obsoletely crenated radiating costellæ,

as the representative of a shell declared to bear a close similitude to a subcancellated white *Emarginula* ("simillima præcedenti" i. e. *P. fissuræ*).

The *Patella* as it appeared in the tenth edition was far better defined, inasmuch as Klein's drawing was the sole figure quoted in illustration, and harmonised correctly with the described features: hence the species may be said to have been pictorially defined in that publication. Now, the cited engraving of Klein was copied from Lister, Hist. Conch. pl. 527, f. 2 (and this reference has been added by Linnæus in his revised copy), which represents either the *F. reticulata* of our own shores, or a very closely-allied congener that I have received from Jamaica, and been unable to distinguish from our native examples. The *reticulata*, moreover, is found in the Mediterranean, and although correctness as to locality may be considered exceptional, not habitual, with our author, yet the name of the authority (Brander) for its habitat gives weight to the statement.

Schröter's ideal of the Linnean *pustula* (Einleit. Conch. pl. 5, f. 8) is not so unlike the shell delineated by Klein.

## *Patella Græca.*

As our author possessed this limpet, and only two shells in his entire collection, the *Fissurella neglecta* of Deshayes (Sow. Conch. Ill. Fis. f. 30) and the *F. Græca* of Lamarek, coincide with his description of it, it is manifest that the name pertains to one or other of them. The latter, a native of the West Indies, of which only a single individual is present in the cabinet, may possibly be regarded as the *Græca* of the twelfth edition of the 'Systema,' since most of the additional synonyms in that publication favour its claims; but the former, of which many examples have been preserved in the cabinet, was assuredly the species originally so named. For not only is it a native of the Mediterranean, as declared by Linnæus, but of the four engravings referred to as illustrative no less than three represent it. Moreover, the term "convexa" (merely convex, not conical) is far more appropriate for the depressed European limpet than for its elevated American congener;

and this strict interpretation of the expression becomes more needful, since only two more specific characteristics (for the "vertice perforato" is generic) are mentioned in the brief diagnosis. Even the name was evidently derived from Tournefort (a pupil of Linnæus, whose work is one of those referred to), who has remarked that the mollusk was frequently eaten by the inhabitants of Greece.

### *Patella nimbosa.*

So utterly inadequate is the extremely brief account of this shell in the 'Systema,' that one might fancy its diagnosis had been expressly framed for the purpose of comprehending all the known *Fissurellæ*, which could not be included in the definition of the three other described members of the genus (Nos. 779, 780, 782). The synonymy was a fearful mass of confusion, even in the tenth edition, where at least half a score of species were confounded in the three references (Gualtier, Lister, and Argenville): in the twelfth edition it was rendered still more intricate by the addition of two more distinct *Fissurellæ* delineated by Adanson and Petiver, and by the citation of the execrable figures of Bonanni, Ginanni, and Columna. None of these shells precisely correspond with the language of our author, unless perchance some of those in Gualtier, which do not appear to have been positively recognised. It is highly probable that the published quotation ("t. 1, 2") of two whole plates of Lister's 'Historiæ,' containing no less than seven widely different limpets, was a misprint for "t. 2, f. 2," as its modern equivalent "t. 528, f. 4" has been substituted in the revised copy of the tenth edition; in the twelfth, figures 91, 92 of Martini's 'Conchylien' have been likewise indicated as illustrative. Since both these engravings represent the *Fissurella nimbosa* of authors, they corroborate the arbitrary selection of that shell as the Linnean *Patella*, of which no example is recorded to be present in his collection.

The expressions "ovalis," "alba aut sanguinea, costis numerosis confertis nodosis" (M. U.) do not harmonise with the "ovata, striata rugosa fusca" of the diagnosis; it is likely, then,

that the *nimbosa* of the 'Museum Ulricæ' was distinct from the specimen described in the earlier publication; assuredly the "cavitas alba" does not suit the green interior of the accepted representative. Although even the limited synonymy of that work, in which Argenville, f. C, was first substituted for the previous I, includes several dissimilar species, none of the drawings exhibit the nodose ribs alluded to in the description.

### *Patella nubecula.*

Chemnitz, Schröter, Gmelin, and most of the earlier conchologists, did not succeed in recognising this shell, which was not adequately illustrated by either synonym or description. Dillwyn, an enlightened follower of the Linnean arrangement, has considered it identical with the *P. rosea* of Gmelin, a species constituted almost entirely from a shell represented by Martini (i. f. 105).

The Mediterranean *Fissurella* (Humph. and Da Cost. Conch. pl. 7, f. 16), termed *rosea* by Philippi, and suspected by him to be the true *nubecula*, is precisely identical with some specimens (plate 4, f. 10) in the Linnean collection, which analysis demonstrates (for they exclusively agree with the definition, and our author has declared his possession of examples) to have been the original types of this *Patella*. The stated habitat, moreover, is in perfect accordance with the true locality, and no other *Fissurella* from that region is known to exhibit the specified painting: the coloured ring that encircles the perforation internally becomes obsolete in adult examples. Plate 529 of Lister's 'Historiæ' has been referred to in the revised 'Systema,' a figure which, although not an accurate delineation of the object intended, displays the nearest approach to its general aspect of the engravings extant at that period.

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## D E N T A L I U M .

“Exserit animal tentacula in formam infundibuli, retrahit et exserit, ea autem non flectit ut Polypi” has been written in the revised copy, at the end of the generic definition.

**Dentalium elephantinum.**

The details of the ‘Museum Ulricæ,’ where no illustrative drawings were referred to, correspond fairly with the characters of the well-known *Dentalium elephantinum* of most writers, a specimen of which (Crouch, Int. Lam. Conch. pl. 1, f. 3) is still preserved in the cabinet of Linnæus, who has recorded his possession of an example, and alone in his collection agrees with the definition. From the extreme rudeness of the earlier engravings of natural-historical objects, representations of many *tusk-shells* that do not answer to the diagnosis in that important feature “decemangulata” have been inadvertently quoted by our author. The synonymy, then, requires a careful weeding. Both the Hs of Argenville and both the 8s of Bonanni are now usually regarded as meant for *D. rectum*; nevertheless, the lower figure of the former, and the upper of the latter, which has been copied by Lister (Conch. pl. 547, f. 1, the corrected reading in the revised copy), exhibit the general aspect of the Linnean shell. The references to the works of Rumphius, Gualtier, and Petiver’s Amboyna shells are correct; not so the synonyms of Ginanni and the ‘Gazophylacium,’ which last should have been printed “53, f. 9” (a copy from Bonanni’s cited drawing), and not “13, f. 9.”

“Testa sulcis 10 magnis fundo striatis” has been added in the revised copy of the ‘Systema.’

### **Dentalium aprinum.**

The shell (Desh. Monog. Dent. pl. 2, f. 18) selected by naturalists as the representative of this species, agrees in all but colouring, being of a rather pale green hue in place of white. As the loss of colour is no rare circumstance in dead specimens, and no known *Dentalium* answers better to the description, the traditional recognition should not be lightly rejected; it is desirable, then, to retain the name for that species, with a "probably" appended, in referring to the 'Systema.' Perhaps, too, the circumstance of there being a specimen of it preserved in the Linnean collection, where no other shell corresponds more fairly with the definition, and the record of the presence of *aprinum* in his cabinet by the younger Linné may be held corroborative: it was manifestly, however, inserted subsequently to the constitution of the species. The Linnean appellation has, likewise, been bestowed upon *D. octogonum* (by Mawe): "decem-angulata," however, is ill suited to express the character of that well-known *tusk-shell*.

### **Dentalium dentalis.**

The cited figure of Rumphius is almost too rude for recognition, yet has somewhat the aspect of *D. octogonum*, which does not answer correctly to the description. As the shell is declared to be present in the Linnean cabinet, and only a single species in the collection corresponds with the assigned characteristics, there can be no doubt of its typical authority. The individuals alluded to have experienced several interruptions (fractures) in their growth; hence the expression "interrupta." They appear to belong to the *Dentalium dentale* of authors (Reeve, Conch. Syst. ii. pl. 130, f. 2), but are rather more coarsely ridged than usual. The correctness of the stated locality greatly facilitated the established identification.



### **Dentalium entalis.**

Most of the figures included in the synonymy of this shell are so uncharacteristic that it is only by the accompanying text that one is enabled to arrive at any definite conclusion as to what species they were intended for. From the brilliant lustre and roseate hue ascribed to the *Dentalia* delineated by Bonanni and Gualtier, I am inclined to refer them to *D. rubescens*; the drawings of Lister (2, not 3, is the numeral appended to the figure, which, however, is the third by position), and perchance of Ginanni, are meant for *Tarentinum*; the species of the 'Fauna Suecica' was evidently, from its Northern locality, the *entale* of the 'British Mollusca,' of which the cited engraving of Rumphius, although possibly not designed for it, proves no bad representation: the seven figures K of Argenville (misquoted C in the twelfth edition) might pass for either of the two latter, as indeed, were it not for the text, might those of Ginanni and Lister. These three *tusk-shells* equally correspond with the brief account in the 'Systema,' and are all present in the Linnean collection; the *entale* in a tin box; the *rubescens* in a paper marked "entalis, Brander;" and the *Tarentinum* in a portion of an old English newspaper (?) with the specific name in a doubtful hand-writing. Although the synonymy of the 'Museum Ulricæ' includes all three, the expressions "alba" and "lævis" of that work, when strictly interpreted, suit the peculiarly smooth and white Northern *entale* so much more accurately than the rest, that it seems desirable, especially when we take into consideration that a Swedish shell was more likely to have attracted our author's attention, to reserve the appellation for that species.

### **Dentalium corneum.**

In the same tin box with the two preceding species in the Linnean cabinet, I found the *Dentalium (Ditrupa) subulatum* of Deshayes (Mon. Dent. pl. 2, f. 29), and as the occurrence of

such a sequence is frequent with the smaller specimens I hold the circumstance deserving of record. Since that shell precisely, and alone of those present exactly, answers to the definition, and the presence of *corneum* in the collection is asserted, the identification can scarcely be doubted. The species differs from the typical white *entalis*, as our author has observed, in being of a dirty horn-colour, and much more often interrupted in growth; the specimens are opaque, and have the past strictures at the stages of increase conspicuously evident. The only other shells in the collection that at all approach the described features are some worn examples of *D. Tarentinum*, which Linnæus manifestly confused with the preceding species.

### ***Dentalium politum* and *eburneum*.**

The *Dentalium eburneum* of Deshayes (Mon. Dent. pl. 3, f. 8), and the *D. politum*, as figured by Mawe (Lin. Conch.) and Crouch (Introd. Lam. Conch.), but with the rings more manifest, are present in the Linnæan cabinet, as declared by Linnæus, and exclusively, but conversely, suit the descriptions of these species: for, strange to relate, naturalists have not remarked the wide distinction between the raised rings ("annulis" or "striis convexis"), which are stated to distinguish the latter, and the simple or incised annular striæ, which characterise the former.

Gualtier's figure (the one next G, for there are two F's), whatever it may have been meant for, and I doubt if it were intended for *politum* proper, exhibits, nevertheless, the peculiar aspect of the ringed striæ, and is therefore illustrative.

### ***Dentalium minutum*.**

The cited figure in Plancus was so rudely executed that it is difficult, if not impossible, to decide what species was intended by it: in the 'Museum Ulricæ' it was referred to *entalis*, and looks, indeed, not unlike a fragment of *Tarentinum*. The *Dentalium gadus* of British writers has been plausibly suggested as

the shell designed by Linnæus, and the hypothesis is in some measure supported by the presence of many individuals of it (Brown, Ill. Conch. G. B. pl. 56, f. 1) in the Linnean collection: they cannot, however, be regarded as of typical authority, since no record is preserved of our author's possession of examples, and were probably introduced subsequently to the publication of the 'Systema.' They correspond more aptly to the terms "lævi" and "erectiuscula" than to the expressions "minuta," "tam parva, &c.," which latter remind one rather of a *Cæcum*: the members of that genus, however, not being perforated posteriorly, would not answer to the generic definition. It seems to me, then, that, although from the inadequacy of the definition the name *minutum* cannot be retained, the species may be referred with doubt to *D. gadus*, a representation of which could not easily have been cited at that period.

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## S E R P U L A .

The great majority of the Linnean *Serpulæ* are mere cases of *Annelides*, which are scarcely ever distinguishable with certainty by the calcareous portion only. It is not my intention, then, to bestow the same serious attention upon them as I have upon the true shells, but merely to contribute such trifling information as may be gleaned from the cabinet and manuscripts of Linnæus.

### *Serpula seminulum.*

In the revised copy of the 'Systema,' page 61 and figure 22 of Martini's first volume have been referred to as illustrative. The quoted engraving is a mere copy from the wretched drawing of Plancus that was cited with doubt in the published synonymy. Although, from the concluding words of the description, it is

evident that our author once possessed examples of it, he has not recorded the presence of it in his cabinet. The *Vermiculum intortum* of Montagu, now generally classed with the *Foraminifera*, is usually regarded as the representative of the species.

### ***Serpula planorbis.***

It is clear from the description of this object, which, Dillwyn remarks, has not been subsequently noticed by any conchologist, that it was neither the shell of a mollusk nor of an *Annelide*; indeed, there is no certainty that it even belonged to the *Foraminifera*, although, from its position next to *seminulum*, one might have surmised such a parentage. Some *Orbitolites* (corals) are the only objects in the collection of Linnæus which at all approach the recorded features.

### ***Serpula spirillum.***

The *Spirorbis spirillum* of British writers (well described by Montagu as a *Serpula*) is now usually received as the Linnean species. Both the rude drawings quoted by our author were apparently designed for that abundant *Annelide*. Ginanni, in his rude sketches of this and *Nautiloides*, has fairly enough contrasted the general differential character of these allied congeners; Plancus, whose figures were badly copied by Martini (Conch. pl. 3, f. 20, c, d), exhibits the two surfaces of an imperfectly coiled specimen. Some uncharacteristic examples are still preserved in the Linnean cabinet, and alone bear any resemblance to the definition. The account in the 'Fauna Suecica' agrees, word for word, with the diagnosis and synonyms in the final edition of the 'Systema.'

### ***Serpula spirorbis.***

The *Spirorbis Nautiloides* of authors (Wood, Ind. Testac. pl. 38, Serp. f. 8) has been generally recognised as the representative of

this species, which Linnæus has not declared his possession of in the final list of his 'Vermes.' The absence of examples from his collection is to be regretted, since they might have explained that puzzling expression "anfractibus supra introrsum subcanaliculatis," which has attracted the attention of Fabricius and other naturalists: it is by no means applicable to *Nautiloides*, at least in its ordinary condition. The words in the 'Fauna Suecica' are those of the 'Systema,' and the cited drawings are, for the most part, so rude that it is difficult to determine what species they were intended for. From this stricture Petiver's engraving, which was clearly designed for *Nautiloides*, as indeed was Ginanni's in all probability likewise, may be excepted: those of Lister and Gualtier might equally well have been quoted for the preceding *Serpula*. In the revised 'Systema' Martini, pl. 3, f. 21, A, B, C, has been referred to as illustrative; the last of these three figures was copied from Baster (pl. 9, f. 3), and represents a worm; the other two have been generally ascribed to *S. Nautiloides*. Upon the whole, then, the synonymy favours the traditional yet questionable identification.

### *Serpula triquetra.*

There can be little doubt that Linnæus described a different species, by this designation, in each of his three principal publications upon conchology; all these were eventually confounded in the synonymy of the twelfth edition of the 'Systema.' A common British *Annelide* (Sow. Conch. Man. f. 7), the *Vermilia triquetra* of Lamarck (excluding his variety and his reference to Born) has been generally received as the representative of the Linnean shell, and upon the whole suits best the *Serpula* as originally characterised in the tenth edition of the 'Systema,' where almost the sole recognisable figure, that in the 'Ephemerides Naturæ Curiosor,' represents that abundant species. The *Serpula* of the 'Fauna Suecica,' which was not illustrated by any pictorial reference, was, I suspect, the *Vermilia* (*Serpula*) *serrulata* of Fleming (Encycl. Edin.—*Serp. tricuspidata* of Sow. Tank. Cat. Appx.—*Placostegus crystallinus* of Philippi in Wiegman. Archiv.), a Boreal species, to which the expressions "apice

tridentato, dente uno superiore recto et duobus inferioribus propriori—nutantibus" (F. S.) are peculiarly appropriate. The presence of that semipellucid triple-pronged object in the typical collection (where the *V. triquetra* has also been preserved), and the addition of "Testa ore fere tridentali" and "Act. Nidros. 4, p. 532, t. 2, f. 14" (an excellent representation of it) to the revised 'Systema' encourages the idea. The "filiformis," "teretiuscula," "subcarinata," of the 'Museum Ulricæ' suit neither of these two: it seems, then, that the species in that publication was also distinct.

### *Serpula intricata.*

It was not to be expected that naturalists should succeed in identifying with certainty and unanimity an unillustrated species so meagrely characterised as the one under consideration. Lamarek and most conchological writers have wholly omitted to notice it; Philippi has not determined it in his valuable paper on *Serpula* in Wiegmann's 'Archives' for 1844; Montagu and his followers have surmised its identity with the *Serpula vermicularis* or *Mülleri*; Schröter, disregarding its Mediterranean locality, fancied that he had detected it in some extra-European *worm-shells*, in illustration of which he has referred us to "Guettard, Mineralog. Belust. pt. 4, pl. 6." It is by no means impossible that the *Serpula Mülleri* (Brit. Mar. Conch. fig. 67) was really the species intended, for an example of that *Annelide* seated upon a Mediterranean *Pinna* (in accordance with the stated habitat) may be discerned in the Linnean collection. Of the *Serpulæ* in that cabinet, however,—and our author has recorded his possession of an example—that which best corresponds with the features of the description is a Mediterranean *worm-shell* which I have also dredged at Guernsey; it seems to be the *S. aspera* of Philippi, to which the *Vermilia scabra* of Lamarek (not of Delessert's figure) has been doubtfully referred. It matters little which of the two may have been the *intricata* of Linnæus, since, from the utter inadequacy of the definition, the species scarcely merits to be retained.

### ***Serpula filograna.***

The *Serpula filograna* of authors (Seba, Mus. vol. iii. pl. 100, f. 8), a common British *Annelide*, is still preserved in the box thus marked in the Linnean cabinet, and exclusively suits the definition of the species. The synonymy, in the main, cannot be pronounced incorrect, although much of it aids us little in determining what was meant. In the only edition of Boccon's 'Museum' I have seen, the rude sketch of *Rete marinum*, in plate 2, may pass for *filograna*; it has not, however, the numerals 13 appended, nor can I find anything like it at "228, t. 7, f. 2." Neither Ray nor Pallas has delineated it; their few words, however, are not at variance with its characters. Seba, pl. 100, f. 8, is decidedly characteristic: Plancus has also well figured it in his Appendix; and the engraving of *Tubipora ramosa* in the Russian 'Transactions' (1758, 1759) is satisfactory enough.

### ***Serpula granulata.***

The *Spirorbis granulata* of British writers (Brit. Marine Conch. f. 64) alone of the contents of the Linnean cabinet answers to the description of this *Annelide*, whose presence in his collection has been recorded by our author. The Northern habitat, by greatly limiting the number of *Spirorbes* to be compared with the meagre definition, doubtlessly facilitated the recognition of the species.

### ***Serpula contortuplicata.***

The account of this species in the 'Fauna Suecica' was copied verbatim from that in the 'Systema.' As Dillwyn has justly observed, the most important features in the description of this *Serpula* are the terms "semiteri, carinata" (keeled and semicylindrical, i. e. flattened below). The group of twisted

*worm-shells* delineated in the cited drawing of Argenville is so little in harmony with these expressions that our author, who only quoted it in the twelfth edition, has himself queried it in the revised 'Systema.' had it been referred to as illustrative of *S. vermicularis* it might have been accepted as a possible representation of that well-known *Annelide*, which was fairly enough delineated by Bonanni also (pt. 1, f. 20, f. 20, F). The words of the 'Museum Ulricæ' are few in number, and not peculiarly suggestive: they run as follows—"parva, crassitie fili grossioris, rugosa, rufa, per varios anfractus instar contortuplicati lumbrici conglomerata." As the brownish red colouring here specified is rarely, if ever, present in European *Serpulæ*, I should have suspected a *Vermetus* was intended had it not been for the extreme slenderness attributed to the tubes. The species of the 'Museum,' in the absence of an illustrative reference, was, in truth, too indefinite for recognition: that of the twelfth edition of the 'Systema' has been usually identified with the *worm-shell* figured by Martini in his 'Conchylien Cabinet,' pl. 3, f. 24, A; in confirmation of which it may be stated that Linnæus has himself quoted the same drawing, as illustrative, in his revised edition.

### *Serpula glomerata.*

Since our author has signified his possession of an example of this European shell, and since one species alone in his collection, the *Vermetus subcancellatus* of Philippi (Moll. Sicil. i. p. 172, pl. 9, f. 20), corresponds with the entire description,—the "decussato-rugosa" is an important feature,—there can be no reasonable doubt of the typical authority of the specimen. I know not a single characteristic delineation of the species in the earlier publications, so that Linnæus, in seeking to illustrate his species by a pictorial reference, has unfortunately quoted two figures that do not answer to the requirements of his diagnosis. Gualtier's engraving, indeed, has been cited with doubt, by Philippi, for the *Vermetus triqueter*, a shell which is devoid of decussated sculpture; Argenville's, utterly unlike the preceding in every respect, and probably meant for a group of *Serpula vermicularis*, does not harmonise with the expressions



“glomerata” and “decussato.” The description of *Serpula glomerata* by Lamarck answers to *V. subcancellatus*; his synonymy to *V. triqueter*; his locality to neither.

The white species of the ‘Museum Ulricæ’ is not the same; it is described in the details as “contortuplicata modis infinitis,” instead of “glomerata;” it was not improbably a true *Serpula*; perhaps, indeed, the details of this and the preceding were accidentally transposed. In the revised copy of the ‘Systema’ “Refert lumbricos conglomeratos” has been written, and figure 23 of Martini’s third plate (a Sicilian *Vermetus*, quoted for *triqueter*) has been referred to.

### *Serpula lumbricalis.*

There can be no doubt, from the synonymy, that this shell belonged to the genus *Vermetus*. Lamarck has unfortunately constituted his *V. lumbricalis* (yet not as the Linnean *Serpula*) from the “*Vermet*” of Adanson, and has pictorially defined it, by referring solely to that author, and to the copy of his figure in Martini’s quarto (vol. i. pl. 3, f. 24, B). It was not likely that our author designed that many-grooved species, for he has not quoted these drawings, although he had copies of both the publications; we are not reminded of it, either, by any of the figures he has referred to. From the catalogue of his *Testacea*, Linnæus appears to have possessed this species; nothing, however, which at all resembles it is to be described in his collection. The two additional references of the twelfth edition of the ‘Systema’ were singularly infelicitous, and utterly unlike each other. The cited drawing of Ginanni, perhaps meant for *Vermetus semicancellatus*, suits not strictly the expression “apice acuto;” that of Baster represents an *Annelide* (copied by Martini, vol. i. pl. 3, f. 21, C) which does not correspond with the “apice spirali” of the description, and, moreover, had been quoted besides for *Serpula spirorbis* by Linnæus. The four original synonyms all exhibit a corkscrew-like shell, and, allowing for the worn state of the older specimens (which may account for the absence of apparent sculpture in the delineations of Gualtier, Rumphius, and Argenville) might fairly be regarded as representations of the common *Vermetus* that

receives the name of *lumbricalis* in most publications (Reeve, Conch. Syst. vol. ii. pl. 152, f. 1). I regard the drawing of Lister, the reference to which was changed in the revised copy to "548, f. 1," its modern equivalent, as a more characteristic figure of the same shell; the three keels are exhibited as developed upon two or three coils only. In his revised 'Systema' our author has also cited a coloured copy of it in Martini's great work (vol. i. pl. 2, f. 12, B); both these engravings have been quoted by Deshayes for his *V. tricarinatus*. I consequently regard the latter as the *S. lumbricalis* of Linnæus, and suggest the name of *Adansoni* for the *V. lumbricalis* of Lamarck. Little additional information is to be gained from the details of the 'Museum Ulricæ.' The "quasi cornea, teres seu versus apicem obsolete angulata" is not, however, inapplicable to ordinary examples.

### *Serpula polythalamia.*

In the revised 'Systema' our author has proposed to transfer this species to *Teredo*, has written "intercepta" in place of "interrupta," and has referred, likewise, to Martini's copy ("Syst. 40, t. 2, f. 6") of the cited figure of Rumphius. As the description, in the main, corresponds with the characters of the quoted illustration, which represents the *Septaria arenaria* of Lamarck, that shell has almost universally been recognised as the Linnean species. In one point only there might seem a discrepancy between the features mentioned by the two naturalists. Linnæus has declared the septæ (or divisional walls) to be entire ("non perforatis"): Lamarck, on the contrary, has affirmed that the majority of them are incomplete. As the illustrious French systematist does not by this assertion deny that some of them may be entire, the apparent difference may depend upon the perfection of the specimens, which are so very rarely obtained in a perfect condition that I cannot call to mind a single individual which possesses externally the antennæ-like terminal tubes depicted in the Dutch publication.

Nothing in the Linnean cabinet suits the definition of this species: the size of the drawers, indeed, would not permit the presence of a perfect example.

## Serpula arenaria.

Before the separation of the *S. polythalamia* as a distinct species, in the twelfth edition of the 'Systema,' the figure of that gigantic tube had been quoted by Linnæus in illustration of the present shell: hence ensued that most inappropriate epithet *arenaria*, the name appended to the engraving of Rumphius. It might, perhaps, have been expected that the appellation would have been transferred to *polythalamia*, along with the illustration, but the "subangulata" of the tenth edition (changed eventually to "subtus planiuscula," indicative of the shell being sessile or attached) did not permit of it; that feature, a characteristic of the *Vermeti* delineated by Gualtier and Bonanni, not being present in the free cylindrical *Septaria*. The Indian habitat, apparently derived from Rumphius, was erroneously retained in the twelfth edition, when the figure itself had been withdrawn from the synonymy. The meagre antithetical description, to which "Lumbrici instar contorta, rarius spiralis, raro extus articulata" has been appended in the revised copy, is applicable to all the *Vermeti* included in the synonymy. The drawings of Bonanni represent the *Vermetus gigas* of the Mediterranean, for which, likewise, those of Gualtier have been quoted by Philippi, and although the figure N is depicted as more strongly sculptured than is usual, it is not so unlike the finer examples. On these grounds has the identity of that shell with the *Serpula arenaria* of the 'Systema' been suggested, and with reason, for a specimen of it (Philippi, Moll. Sicil. vol. i. pl. 9, f. 18) is still preserved in the cabinet of Linnæus (who has recorded his possession of an example of *arenaria*), and alone answers to the definition of the species. Argenville's drawing (copied by Martini as figure 19, A of his third plate) seems the spiral commencement of another *Vermetus* (perhaps a solitary *triqueter*), but is not known to me; it was (wisely?) passed over in the tenth edition, and as we learn from the "rarius spiralis," was not to be regarded as the typical or more characteristic form.

The "sæpe in duos ramos bifida" of the 'Museum Ulricæ,' where the very dissimilar figures of Gualtier and Rumphius

were alike referred to, will only apply to the latter, from which, in all probability, the characteristic was deduced; yet neither "curvata," nor the attached diagnosis are applicable to that shell. It is not unworthy of notice that class 1, part 2, genus 3, of Gualtier's arrangement is equivalent to the modern limits of *Vermetus* proper.

### *Serpula anguina.*

Born rightly decided that the form *b* was essentially distinct from the typical one; he has gravely erred, however, in transferring the name *anguina* to the supposed variety, and bestowing the new appellation *muricata* upon the type, more especially as the latter, even before the publication of the 'Systema,' had been termed *Solen anguinus* by Rumphius, was an Indian shell ("Habitat in India"), and had a somewhat articulated or interrupted fissure, as declared by Linnæus, whilst the one preferred by himself was European, and had the slit continuous or uninterrupted. The peculiar fissure is insisted upon, also, in the 'Museum Ulricæ,' where it is declared to be "passim concatenata, et quasi poris pertusa:" yet, strange to relate, the variety in that work is the prickly one. This combination of a punctured fissure with a merely wrinkled ("rugæ transversales," M. U.), unarmed tube, is found in the *Siliquaria Australis* of Quoy; even as a muricated tube conjoined with a simple fissure is characteristic of *S. squamata* (Chenu, Ill. Conch. Sil. pl. 2, f. 12). I do not consider, then, that the Mediterranean *anguina* (of Born) was indicated as the typical form in either the 'Systema' or the 'Museum:' at all events, it was not in the former, which (ed. 10) has priority. The three first species just mentioned are present in the Linnean collection. Gualtier's figure (misprinted H in the 'Museum'), though it looks like a *Siliquaria*, appears from the text "notulis nigris punctatis" to be simply dotted with coloured markings; the drawing of Lister (548, f. 2, in the revised copy) and the figure 2 of Rumphius represent upper portions only, and are very uncharacteristic.

### ***Serpula vermicularis.***

The few characteristics specified in the description correspond so fairly with the features of the *worm-shell* delineated by Ellis, the sole author referred to as illustrative, that the species was pictorially defined by that reference. It is the *Serpula vermicularis* of most British writers (Brit. Mar. Conch. f. 66), and the type, which is still preserved in the cabinet of Linnæus, alone of its contents answers correctly to the definition.

### ***Serpula penis.***

All the referred-to engravings exhibit an *Aspergillum*, and almost all have formerly been regarded as representations of the *A. Javanum* of Lamarck. The relative proportion of the tubes of the fringe, the number and size of the pores upon the disk, the shape of the imbedded bivalves, were not of old so nicely scrutinised: the Monograph in Chenu's 'Illustrations' compels a closer examination.

Of the illustrative figures that of Gualtier, a copy from which by Martini (Conch. Cab. i. f. 7) has been likewise cited in the revised 'Systema,' is decidedly the most characteristic, and clearly represents the *A. Javanum* of Chenu's Monograph: the other synonyms have been also referred by that author to the same species, but the magnitude of the pores in Bonanni's engraving, and the large tubes of the discal fringe, as represented by Rumphius, seem to forbid such a conclusion. The former of these rude drawings, taken from an Amboyna shell, does not exhibit any discal fringe.

No doubt need be entertained that the *A. Javanum* was the shell designed by Linnæus (who has signified his early possession of an example), since the only specimens in his cabinet that answer to the definition precisely resemble Chenu's figure of it (Conch. Ill. Asperg. pl. 2, f. 1, middle fig.). The presence of a broken-off disk of the *A. incrassatum*? of the same writer

seems to disturb this conclusion, yet, although that species might answer to the description, it possesses not the additional characters gleaned from the cited engravings. The reference to the earlier edition of Lister's 'Historiæ' has been changed to "548, f. 3," by our author, who has likewise quoted the "Act. Nidros. vol. iv. pl. 4, f. 9, 10," where the fragment alluded to is most admirably depicted.

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## T E R E D O .

### *Teredo navalis.*

It is impossible to determine, from the language of Linnæus, to what particular species of *ship-worm* the very comprehensive term *navalis* should be restricted. The original account in the tenth edition of the 'Systema' (p. 651), where it was doubtfully placed with the intestinal worms, is much more elaborate and full of detail than in the final edition, and the "angulo recto et obtuso" of the valves assuredly limits in some measure the number of species to which the description might otherwise be applied. Our author has not indicated his possession of examples, consequently his cabinet affords no assistance in the investigation. Four works are referred to for the synonymy: Plancus, whose expressions are applicable to any *ship-worm*; Vallisnieri, whose figure, from the neglect of sculpture, is irre-cognisable; the 'Fauna Suecica;' and the Monograph of Sellius. This last reference is highly important, not merely on account of the merits of the engraving, where both valves and pallets are clearly delineated, but because it was the only illustration quoted in the 'Fauna Suecica.' The *T. navalis* of that work, then, is a pictorially defined, determinable species, and is identical, as Lovén has remarked, with the *T. Batava* of Spengler. It is not the *navalis* of the earlier British writers,

but has been described and figured with that name in the 'British Mollusca' (pl. 1, f. 7, and pl. 18, f. 3, 4).

"Acta Flissens. 1769, p. 387, t. 2, see worm" was written by Linnæus in his revised copy of the 'Systema.'

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## S A B E L L A .

This genus was first constituted, in the twelfth edition of the 'Systema,' for the reception of the *Serpula penicillus*, *S. ringens*, and *Tubipora arenosa* of the tenth edition, and certain allied forms then first enumerated. As the principal design of this publication has been the elucidation of the Linnean shells in the restricted sense of the word only, I shall not devote much space to the critical examination of the separate members of this group, but simply relate the few changes or additions proposed by Linnæus in his revised copy. He has not recorded his possession of a single one of them, so that his cabinet would not be of authority in determining what were the originals of his descriptions.

In the generic definition Linnæus has expunged the four last words, and substituted "membranacea."

**S. GRANULATA.** For an illustration of this species we are referred to "Mart. Syst. 71, t. 4, f. 28," the tube of a *Terebella* which is not uncommon in the sandy coasts of Great Britain.

**S. RINGENS.** Evidently not even an *Annelide*, but the larva-case of an insect. Baster's drawing, however (only quoted in the final edition), represents an English *Terebella*.

**S. ALVEOLATA.** Evidently the common *Sabellaria alveolata* of our own shores.

**S. CHRYSODON.** Reference has been made in the revised 'Systema' to figures 29, 30 of Martini's 'Conchylien,' which appear to represent the *Terebella chrysodon* of authors, a

native of our own coast. This does not suit the specified locality.

*S. PENICILLUS*. Figure 32 of Martini's Conchology has been referred to as illustrative; it was evidently copied from the cited drawing of Ellis. Baster's drawing appears to have been designed for the same species.

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## SPECIES OF THE MANTISSA.

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Very few of the shells mentioned in this work appear to have been described from specimens that belonged to our author. Probably the original types were to be found in the cabinets of Ziergoveil and De Geer, which (as Murray, the pupil of Linnæus, has informed us) ranked with our author's and the Queen of Sweden's as the four principal collections in the kingdom. It is not my intention, then, to devote the same labour to these species as to those described in the 'Systema,' for I have not access to like materials for their elucidation.

LEPAS DIADEMA has been spoken of in my previous notes.

LEPAS PALMIPES may possibly have been identical with the *Balanus Patelliformis*, for our author has recorded his possession of an example, and no other *Cirripede* in his collection so well accords with the definition of *palmipes* as a specimen of it (Chemn. Conch. pl. 98, f. 839).

LEPAS GALEATA. This name has been attached by our author to Ellis's drawing of the *Conopæa galeata* in the 'Philosophical Transactions' (vol. L. pl. 34, f. 19).

SOLENI DIPHOS was once thought by Lamarck to be his *Solen violaceus*, which corresponds fairly enough with the description, if we may translate "ovali-recta" as "elongated-oval." There is a young example of the latter in the Linnean collection, but no record of the presence of *diphos*.

CARDIUM LITHOCARDIUM, judging from the Linnean collection, was apparently the fossil *Trigonia costata*, var. *elongata* (Enc. Méth. Vers. pl. 238, f. 2). The *Cardita avicularis* (Ann. du Mus. ix. pl. 19, f. 6, a, b) has, also, been suggested as the representative.

VENUS PUERPERA follows *reticulata* in the revised 'Systema.' Neither of the very dissimilar figures referred to bears the least resemblance to the shell which has been universally accepted

for the species. There is no reason, however, to question the correctness of the identification.

VENUS RUGOSA was so briefly characterised that even its generic position can only be guessed at: the plicated margin and thick subcylindrical radiating ribs remind one of the ordinary features of a *Cardita*; the members of that genus, however, have been located in *Chama* by Linnæus. Gmelin has supposed it to be the *Venus rigida*! Dillwyn has quoted it for a young *V. verrucosa*.

VENUS TRIPLA follows *castrensis* in the revised 'Systema,' and has been generally recognised as the *Cytherea tripla* (Sow. Thes. Conch. ii. pl. 128, f. 19) of the Lamarckian arrangement.

VENUS SUCCINCTA follows *Erycina* in the revised 'Systema.' Its meagre description would apply to half a dozen known species of *Veneridæ*, and must consequently be pronounced insufficient for the purposes of definition. I am not aware that any writer has positively identified it: the *V. succincta* of Valenciennes (Zool. Humb.) was evidently different. The characters remind one of an *Astarte* or of a *Meroe* such as *effossa*.

VENUS TUMIDULA was possibly a *Lucina*, for it has been placed between *incrustedata* and *punctata* in the revised 'Systema.' It was too ill defined for recognition.

VENUS COMPRESSA, as Dillwyn has remarked, has not been successfully identified. The unillustrated description is applicable to more than one shell, and amongst others to a nearly mature specimen of *Astarte elliptica*.

CHAMA RUGOSA has been referred by Solander to *Cardita Ajar*, which, however, is not furnished with the specified number of ribs: it is more likely that it was identical with the fossil *Venericardia imbricata* (Enc. Méth. Vers, pl. 274, f. 4). In the revised 'Systema' it preceded *antiquata*.

CHAMA GRYPHICA followed *bicornis* in the revised 'Systema.' There is a large fossil *Chama*, inscribed *gryphita*, in the Linnean cabinet, which perfectly agrees with the description, and was, I doubt not, the original type. It has been delineated in the fifth plate (f. 11) of the present work, but has been reduced in size.

SPONDYLUS ANTIQUATUS. I am not aware that this little

species, which followed *plicatus* in the revised 'Systema,' has ever been recognised. It was, perchance, a fossil.

OSTREA PES-LUTRÆ was preceded by *fasciata* in the revised 'Systema.' Gmelin has quoted the same figures for this and *plica*, and it was hence, probably, that Dillwyn surmised it to be an imperfect example of that well-known shell. The definition was insufficient for a member of so large a group as *Pecten*, to which genus it assuredly belonged: some individuals of *P. Danicus*, with mutilated auricles, in the Linnean cabinet, correspond fairly enough with it.

ANOMIA SANDALIUM. The *Calceola sandalina* of Lamarck was found in an unmarked box in the Linnean cabinet enveloped in an engraving (*Conchyta Juliaceusis*, Hupsch. Test. Petrif.) which represented it. In the same receptacle was the *Gorophyllum pyramidale*, a well-known Silurian fossil from Gothland, which some have fancied to be a second species of *Calceola*, but which is now known to be a coral. I am indebted for these names to Messrs. Davidson and Salter.

MYTILUS PHOLADIS has been generally referred to the *Saxicava rugosa*: the description is equally applicable to aged individuals of *S. arctica*. In either case the species had received an earlier designation.

MYTILUS STRIATULUS followed *bidens* in the revised 'Systema.' Schröter's identification (Einleit. Conch. i. pl. 9, f. 16) seems to have been generally accepted; the "subtilissime striata," however, hardly suits the *Mytilus* he has delineated.

CYPRÆA CERVUS is generally supposed to be the same as the *Cypræa cervina* of Lamarck.

CYPRÆA PUNCTATA has been usually identified with the pretty little *Cowry* so designated by Reeve, in his Monograph of that genus (Conch. Icon. Cyp. f. 101).

VOLUTA FILARIS, which followed *ruffina* in the revised 'Systema,' was assuredly the *Mitra filosa* of Lamarck, who has rightly ascribed four folds to its columella. The fourth or lowest fold is often very obscure, hence Linnæus had characterised it as "triplicata."

STROMBUS MINIMUS. The suggestion of Deshayes that this name should be restored to the *Strombus troglodytes* of Lamarck's 'Animaux' is now generally assented to.

STROMBUS CLAVUS was undoubtedly constituted from an

immature specimen of the *Rostellaria fusus*, which was very fairly represented in the cited drawing of Argenville.

BUCCINUM RUGOSUM. The *Cassidaria Tyrrhena* of Lamarek's 'Animaux' (Chemn. Conch. Cab. x. f. 1461, 2) is thus named in the Linnean collection, which confirms the conclusion arrived at by both Dillwyn and Deshayes.

BUCCINUM MONILE, GEMICUM and PROXIMATUM followed *hecticum* in the copy of the 'Systema' that belonged to the younger Linné. It is probable that they were either *Bulliæ* or *Terebræ*, but no salient characteristics have been mentioned by which we can recognise the objects intended. Menke, in his 'Synopsis,' has indicated a *Terebra* as the *Buccinum monile* of Linnæus; he has not, however, described it.

BUCCINUM CINGULATUM has been asserted, by Hebling, Dillwyn and Deshayes, to be the shell subsequently called *Purpura trochlea* in the 'Animaux sans Vertèbres.' Examples of that whelk (Enc. Méth. Vers, pl. 422, f. 4) are still preserved in the box marked for the species in the Linnean cabinet.

MUREX SUCCINCTUS. The *Triton clandestinus* (Chemn. Conch. Cab. xi. f. 1856, 7) is marked for this species in the Linnean collection.

MUREX CONTRARIUS we learn, from the typical examples, to have been the *Fusus perversus* of Kiener's 'Coquilles Vivantes' (Fus. pl. 20, f. 1).

NERITA LACTARIA has been confidently pronounced, by both Dillwyn and Récluz, to be a mere white variety of the *Nerita plicata* of authors.

PATELLA NOACHINA and MILITARIS followed *antiquata* in the copy of the 'Systema' that belonged to the younger Linné. The former is now generally recognised as our British *Puncturella*, the latter has been conjectured by Deshayes to be the *Hipponyx subrufus*.

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# SYSTEMA NATURÆ

## CAROLI A LINNÉ.

EDITIO DUODECIMA: 1766.



### VERMES. TESTACEA.

*Animalia Mollusca, simplicia, domo, sæpius calcarea, propria obtecta.*

300. CHITON. Animal Doris. Testæ plures, longitudinaliter digestæ, dorso incumbentes.

1106. HISPIDUS. 1. C. testa sexvalvi striata. Habitat . . .

1106. TUBERCULATUS. 2. C. testa septemvalvi, corpore tuberculato. *Mus. Ad. Fr.* 1. p. 96. *Chiton oscabrion*.—*Pet. gaz. t.* 1. f. 4. *Oscabrion*.—*Sloan. jam.* 2. p. 233. *Patella oblonga articulata*.—*Seb. mus.* 3. t. 1. f. 14. Habitat in America. Corpus ovale, tectum supra tuberculis calloso-elevatis, in quincuncem positis. Testæ 7, magis transversæ, arcuato-striatæ, vix carinatæ, lateribus angulo distinctæ; harum 1 et 7 adpersæ tuberculis elevatis.

1106. ACULEATUS. 3. C. testa octovalvi striata, corpore subaculato. *Rumph. mus. t.* 10. f. 4. *Limax marina*.—*Edw. av. t.* 286. f. B.—*Seb. mus.* 2. t. 61. f. 4. Habitat in Asia. Corpus facie præcedentis, ovale, supra hispidum aculeis angustis subulatis rubris subarcuatis inæqualibus. Testæ 8, conchiformes, transverse per totum striatæ, non carinatæ: ultima testa minore.

1106. FASCICULARIS. 4. C. testa octovalvi, corpore ad valvulas utrinque fasciculato. Habitat in Barbaria. *E. Brander*, Consul Succorum apud Algiros. Corpus cinereum, læve. Testæ leviter carinatæ. Fasciculi pilorum totidem, albidī, juxta testarum latera corpori insident.

1107. SQUAMOSUS. 5. C. testa octovalvi semistriata, corpore squamuloso. *M. L. U.* 465.\* Habitat in Indiis.

1107. PUNCTATUS. 6. C. testa octovalvi lævi, corpore punctis excavatis. *Amæn. Acad.* 3. p. 256. *Chiton corpore punctato, testis octo*.—*Osbeck, iter.* 62.—*Seb. mus.* 3. t. 1. f. 13.—*E. N. C.* 1727. p. 63. t. 1. f. 1, 2. *Calva serpentis diadema*. Habitat in Asia, Europa, America.

1107. RUBER. 7. C. testa octovalvi arcuato-substriata, corpore ru-

bro. *Fn. suec.* 2119. Habitat in Oceano Septentrionali instar Patellæ affixa. *Konig, Zoega.* Testa ovalis, oblongiuscula, dorso carinata, valvulis oblique subarcuato-striatis.

1107. ALBUS. 8. C. testa octovalvi lævi: valvula prima postice emarginata. Habitat in O. Islandico. *Konig.* Testa ovalis, lævis, alba, vix dorsata, minus carinata.

1107. CINEREA. 9. C. testa octovalvi ovata. Habitat in O. Norvegico. *Konig.* Testa vix Cimice major, planiuscula, cinerea, ovata s. postice paulo latior, parum carinata, non glabra.

301. LEPAS. Animal Triton. Testa multivalvis, inæqualvis, basi affixa.

1107. BALANUS. 10. L. testa conica sulcata fixa, operculis acuminatis. *Fn. suec.* 2122.\*—*M. L. U.* 466. n. 2.\*—*It. vgoth.* 170.—*Lewwenh. epist.* 82. p. 472. t. 465.—*Klein. ostr.* t. 12. f. 94, 95.—*Gualt. test.* 106. f. P.—*Act. angl.* 1758. v. 2. t. 34. f. 17.—*Baster. subs.* 127. t. 12. f. 7–10. Habitat ad littora oceani Europæi.

1108. BALANOIDES. 11. L. testa conica truncata lævi fixa, operculis obtusis. *Fn. suec.* 2123.\*—*List. angl.* 196. t. 2. f. 41. et *conch.* 3. t. 444. f. 287.—*Pet. mus.* 82. n. 802. *Balanus parvus vulgaris.*—*Lewwenh. arc.* 474. t. 465. f. 1. E. et f. 7.—*Argenv. conch.* t. 30. f. D. Habitat in O. septentrionalis rupibus, sed minor, copiosior, non supra refluxum altius; dehiscens sub fluxu, clausus sub æstu.

1108. TINTINNABULUM. 12. L. testa conica rugosa obtusa fixa. *M. L. U.* 466. n. 3.\*—*Lang. test.* 4. *Balanus tintinnabuliformis lævis.*—*Rumph. mus.* t. 41. f. A.—*Gualt. test.* t. 106. f. H.—*Argenv. conch.* t. 30. f. A.—*Act. angl.* 1758. v. 2. t. 34. f. 8. Habitat in O. Europæo. Valde affinis præcedenti, sed pollice crassior.

1108. DIADEMA. 13. L. testa subrotunda sexlobata sulcata fixa. *Gualt. test.* t. 106. f. Q.—*Boccon. recher.* 294.—*Rumph. mus.* t. 14. f. H. Habitat ad Mare Mediterraneum et Indicum. Testa figura Echini absque radiis.

1108. TESTUDINARIA. 14. L. testa plano-convexa fixa, radiis sex excavatis striatis. *M. L. U.* 467. n. 4.\*—*Bonan. kirch.* 1. f. 36.—*Rumph. mus.* t. 40. f. K. *Verruca testudinaria.*—*Gualt. test.* t. 106. f. M, N, O.—*Pet. gaz.* t. 9. f. 9; *amb.* t. 1. f. XI.—*Planc. conch.* t. 5. f. 2, 2.—*Klein. ostr.* t. 12. f. 99.—*Act. angl.* 1758. v. 2. t. 34. f. 12, 13.—*Ginan. adr.* 41. t. 30. f. 175. Habitat in Pelago, sæpe in Testudinibus, in M. Adriatico.

1108. MITELLA. 15. L. testa compresso-erecta difformiter striata. *M. L. U.* 467. n. 5.\*—*Lang. test.* 4. *Balanus tulipæformis striatus.*—*Gesn. aqu.* 121. *Balanus rondeletii.*—*Rumph. mus.* t. 47. f. M.—

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LEPADUM testæ in diversis diversæ figura et numero valvularum, omnes fixæ nec e loco mobiles.

*Argenv. conch. t. 30. f. E.*—*Act. angl. 1758. v. 2. t. 23. f. 4.*—*Pet. gaz. t. 6. f. 10.* *Balanus chinensis striatus.*—*Klein. ostr. t. 12. f. 100.*—*Seb. mus. 3. t. 16. f. 3.* Habitat . . .

1109. SCALPELLUM. 16. L. testa compressa tredecimvalvi læviuscula, intestino squamoso insidente. *Fn. suec. 2121.\*—Gualt. test. 106. f. c.*—*Ellis. act. angl. 1758. v. 2. t. 34. f. 4.* Habitat in O. septentrionali. Non semper sessilis, sæpe tenui intestino insidens.

1109. ANSERIFERA. 17. L. testa compressa quinquevalvi striata, intestino insidente. Habitat in Pelago Americano; in fossilibus magna. Testa hujus minuta, semine Lini minor, structura omnino L. anatiferae, sed valvulis sulcatis, excepta prima; sulci hi distincti, elevati.

1109. ANATIFERA. 18. L. testa compressa quinquevalvi lævi intestino insidente. *Fn. suec. 2120. M. L. U. 468. n. 6.\*—Fn. suec. 1. n. 1350.* *Lepas testa compressa basi membrana cylindrica.*—*Aldr. orn. c. 20. f. 548.* *Concha anatifera.*—*Bonan. recr. 2. f. 2.* *Tellina pedata.*—*Imperat. nat. 904.* *Concha pedata.*—*Stalpart. obs. 2. p. 458. t. 15.*—*Barth. cent. 6. p. 271.*—*Worm. mus. 256.*—*Marcgr. bras. 188.*—*Grew. mus. 148.*—*Hoffm. ins. 3. t. 6.*—*Sibb. mus. 170. n. 2.*—*List. exerc. t. 7. f. 4, 5;* *conch. t. 440. f. 283.*—*Gualt. test. t. 106. f. A-D.*—*Argenv. conch. t. 30. f. F, G.*—*Planc. conch. t. 5. f. 4.*—*Column. phytob. 110. t. 30.*—*Bauh. pin. 513.* *Arbor ex cujus ligni putredine vermes, 1, 2, 3.*—*Needh. micr. t. 7. f. 1, 2, et t. 6.*—*Seb. mus. 3. t. 16. f. 1, 2.*—*Osborn. 82.* *Lepas anatifera c. Tritone.*—*Hil. angl. 1758. v. 2. t. 34. f. 6.* Habitat in Pelago.

1110. AURITA. 19. L. testa membranacea ventricosa tubo insidente, ore octovalvi dentato: tubulo gemino aurita. *Ellis. act. angl. 1758. t. 34. f. 1.* *Lepas nuda comosa aurita.*—*Edw. av. 2. t. 286. f. A.*—*Seb. mus. 3. t. 16. f. 5.* Habitat in O. Septentrionali. Intestinum longum, terminatum ventriculo membranaceo. Apertura clausa valvulis testaceis 8. Tubi 2, breves, a tergo ventris sursum spectantes.

302. PHOLAS. Animal Ascidia. Testa bivalvis, divaricata, cum minoribus accessoriis difformibus, ad cardinem. Cardo recurvatus, connexus cartilagine.

1110. DACTYLUS. 20. P. testa oblonga hinc reticulato-striata.—*Fn. suec. 2124.*—*Rond. test. 23. f. 2.*—*Bell. aqu. 414.*—*List. angl. app. t. 2. f. 3.*—*Bonan. recr. 2. t. 25, 26, 27.*—*Gualt. test. t. 105. f. A, B, C, D.*—*Argenv. conch. t. 30. f. K.*—*Ginan. adr. 44. t. 31. f. 184.*—*Seb. mus. 3. t. 16. f. 6.*—*Reaum. act. paris. 1712. p. 163.*—*Planc. conch. 33. n. 3.* Habitat intra Europæ scopulos, perterebratis saxis, noctu lucens.

PHOLADES terebrant, inurant, inhabitant, roduntque rupes marinas calcareas, nedum cotaceas, intra quas latent phosphorci. *Reaum. act. paris. 1712. p. 126.* His natura in tenebris, remoto lumine, alio fulgore clarere, et quanto magis humorem habeant, ludere in ore mandentium, lucere in manibus, atque etiam in solo et veste decidentibus guttis. *Plin. ix. 61.*

1111. *COSTATUS*. 21. Ph. testa ovata costis elevatis striata. *Gualt. test. t. 105. f. G.* Habitat intra scopulos Europæ australis.

1111. *STRIATUS*. 22. Ph. testa ovata multifariam striata. *Gualt. test. t. 105. f. F.* Habitat intra scopulos maritimos Europæ australis.

1111. *CANDIDUS*. 23. Ph. testa oblonga undique striis decussatis muricata. *M. L. U. 469. n. 7.\*—Bonan. recr. 2. t. 24.—Gualt. test. t. 105. f. E.—List. angl. 193. t. 5. f. 39; app. t. 2. f. 4, 6.* Habitat in Europæ et Americæ scopulis marinis.

1111. *PUSILLUS*. 24. Ph. testa oblonga rotundata arcuato-striata.† *Brown. jam. 417. t. 40. f. 11.* Habitat in America. Valvulæ accessoriæ a tergo testæ singulares; an distincti generis?

1111. *CRISPATA*. 25. Ph. testa ovali hinc obtusiore crispato-striata, cardinis dente curvo. *M. L. U. 469. n. 8.\*—Fn. suec. 2125.\* Mya crispata.—List. angl. t. 5. f. 38; app. t. 2. f. 7.* Habitat in O. septentrionali. Testa tertia exigua ad cardinem. *List. app. 36.*

303. *MYA*. Animal Ascidia. Testa bivalvis, hians altera extremitate. Cardio dente (plerisque) solido, crasso, patulo vacuo (nec inserto testæ oppositæ).

1112. *TRUNCATA*. 26. M. testa ovata postice truncata, cardinis dente antrorsum porrecto obtusissimo. *Fn. suec. 2126.—It. wgoth. 199. n. 3. t. 5. f. 3.—List. angl. 191. t. 5. f. 36.—Gualt. test. t. 91. f. D.* Habitat in O. Europæo.

1112. *ARENARIA*. 27. M. testa ovata postice rotundata, cardinis dente antrorsum porrecto rotundato denticuloque laterali. *Fn. suec. 2127.\*—Baster. subs. 2. p. 69. t. 7. f. 1, 2, 3. Mya arenaria.—It. wgoth. 187.* Habitat in O. Europæ septentrionalis sub arena, foraminibus duobus detegenda; proboscide arenam excavat. Cardinis dens in altera tantum testa prominens cum denticulo parallelo versus vulvam.

1112. *PICTORUM*. 28. M. testa ovata, cardinis dente primario crenulato, laterali longitudinali: alterius duplicato. *Fn. suec. 2129.—Bonan. recr. 2. t. 41.—List. angl. app. t. 1. f. 4.* Habitat in Europæ fluviiis.

1112. *MARGARITIFERA*. 29. M. testa ovata antice coarctata, cardinis dente primario conico, natibus decorticatis. *Fn. suec. 2130.\*—List. conch. t. 149. f. 4; angl. app. 15. t. 1. f. 1.—Klein. ostr. t. 10. f. 47.* Habitat in totius orbis arctici cataractis.

1113. *PERNA*. 30. M. testa oblonga dilatata basi angustiore compressa. *M. L. U. 470. n. 10.\*—Argenv. conch. t. 25. f. N.* Habitat in Freto Magellanico. Forte Mytili species.

1113. *VULSELLA*. 31. M. testa linguiformi, cardine terminali depresso semiorbiculato. *M. L. U. 471. n. 11.\*—Mus. Tessin. t. 6. f. 3.*

*MYÆ* sæpius terebrant fundum et intra eundem se defodiunt vel totæ vel qua partem.



—*Rumph. Mus. t. 46. f. A.*—*Gualt. test. t. 90. f. H.* Habitat in Indiis.

1113. ARCTICA. 32. M. testa striata: valvulis carinis duabus spinulosis, cardine edentulo. Habitat in Oceano Norvegico. *F. Zoega.* Testa magnitudine Fabæ, rudis, facie Arcæ Noæ, pallida. Antice retuso-planiuscula, parte anteriore obtusissima, posteriore brevior, acutiuscula; pars anterior a natibus excurrit angulis duobus remotis antrorsum subaculeatis. Cavitas interna lactea est. Cardo vix ullus.

304. SOLEN. Animal Ascidia. Testa bivalvis, oblonga, utroque latere hians. Cardo: dens subulatus, reflexus, sæpe duplex, non insertus testæ oppositæ; margo lateralis obsoletior.

1113. VAGINA. 33. S. testa lineari recta: extremitate altera marginata, cardinibus unidentatis. *M. L. U. 472. n. 12.\**—*Rumph. mus. t. 45. f. M.*—*Gualt. test. t. 95. f. D.*—*Argenv. conch. t. 27. f. K.*—*Klein. ostr. t. 11. f. 65.* Habitat in M. Europæo, Indico.

1113. SILIQUA. 34. S. testa lineari recta, cardine altero bidentato. *Fu. suec. 2131.*—*M. L. U. 473. n. 13.\**—*Rond. test. 43.*—*Bell. aqu. t. 414. f. 2.*—*List. angl. t. 5. f. 37.*—*Bonan. recr. 2. t. 57.*—*Gualt. test. t. 95. f. C.*—*Argenv. conch. t. 27. f. M.*—*Planc. conch. t. 3. f. 6.*—*Ginan. adr. 2. p. 37. t. 27. f. 170.* Habitat in O. Europæo. Hæc, præcedens et sequens nimis affines sunt.

1114. ENSIS. 35. S. testa lineari subarcuata, cardine altero bidentato. *M. L. U. 473. n. 14.\**—*List. angl. app. t. 2. f. 9.*—*Argenv. conch. t. 27. f. L?* Habitat in M. Mediterraneo, Anglico. Testa utraque extremitate rotundata est et præcedente minor ac magis arcuata.

1114. LEGUMEN. 36. S. testa lineari-ovali recta, cardinibus bidentatis: alterius bifido. *Planc. conch. t. 3. f. 5.*—*Gualt. test. t. 91. f. A.*—*Adans. sen. 1. t. 19. f. 3.* Habitat in M. Mediterraneo. *Fr. Logie,* Algeris, patriæ conchiliis dives. Præcedentibus brevior et cardine versus medium testæ, nec ad extremitatem, ut in præcedentibus.

1114. CULTELLUS. 37. S. testa ovali-oblonga subarcuata. *M. L. U. 474. n. 15.\**—*Rumph. mus. t. 45. f. F.*—*Gualt. test. t. 90. f. E.* Habitat in Amboinæ littoribus arenosis. Cardinis dentes ut in primis tribus, sed callus marginalis ut in specie prima.

1114. RADIATUS. 38. S. testa ovali recta lævi, costa transversali adnata depressa. *M. L. U. 474. n. 16.\**—*Rumph. mus. t. 45. f. E.*—*Gualt. test. t. 91. f. B.*—*Argenv. conch. t. 25. f. P.* Habitat in O. Asiatico. Testa violacea radiis quatuor albis.

1115. STRIGILATUS. 39. S. testa ovali oblique striata. *M. L. U. 475. n. 17.\**—*Rond. test. 14.* *Concha nigra.*—*Bonan. recr. 2. t. 77.*

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CARDO in quibusdam speciebus omnino edentulus, dignoscitur tamen ex animali testæ hiatu ad alteram extremitatem.

—*Gualt. test. t. 91. f. C.*—*Adans. seneg. 1. t. 19. f. 2.* Habitat in M. Mediterraneo. Testa incarnata radiis duobus albis. Dens cardinis recurvatus exsertus; margoque cardinis prominulus.

1115. ANATINUS. 40. S. testa ovata membranacea inflata pilosa, cardinis costa falcata. *M. L. U. 475. n. 18.\**—*Rumph. mus. t. 45. f. O. Rostrum anatis.* Habitat in O. Asiatici fundo arenoso. Testa pellucida alba et fere membranacea.

1115. BULLATUS. 41. S. testa subrotunda inflata substriata antice crenato-hiante. *Rumph. mus. t. 44. f. N.* Habitat . . . Dens cardinis unicus; marginales remoti compressi.

1115. MINUTUS. 42. S. testa ovali: valvularum angulis utrisque serratis. Habitat in O. Norvegico. *Martin.* Testa ovalis, magnitudine seminis Cucumeris, longitudinaliter striata, apice truncata. Carinae a cardine versus apicem divergentes, acutae, serrato-dentatae.

1115. VIRENS. 43. S. testa ovato-oblonga, umbonibus tumidis. Habitat in Java. Testa inaequalis ovato-oblonga, umbonibus gibba, alba, extus virens, fragilissima, diaphana, forma Myae pictorum, apice et basi vix clausa. Cardio alterius dentibus duobus approximatis absque antagonistis; praeterea callus in utraque testa, quasi dens obsoletus testae.

305. TELLINA. Animal Tethys. Testa bivalvis, antice hinc ad alterum latus flexa. Cardio: dentes tres: laterales plani, alterius testae.

\* *Ovatae, crassiusculae.*

1116. GARGADIA. 44. T. testa subrotunda compressa antice rugosa, rima dentata. *M. L. U. 476. n. 19.\**—*Rumph. mus. t. 43. f. N. Remies gargadica.*—*Klein. ostr. t. 11. f. 55.* Habitat in O. Asiatico.

1116. LINGUA-FELIS. 45. T. testa subovata scabra: squamulis lunatis quincuncialibus. *M. L. U. 476. n. 20.\**—*Rumph. mus. t. 45. f. G.*—*Gualt. test. t. 76. f. B.*—*Klein. ostr. t. 11. f. 62.* Habitat in O. Asiatico. Differt a T. scobinata, quod sesquialtor quam longa.

1116. VIRGATA. 46. T. testa ovali striis transversis recurvatis antice angulata, dentibus lateralibus prominulis. *M. L. U. 477. n. 21.\**—*Rumph. mus. t. 45. f. II. Tellina virgata.*—*Argenv. conch. t. 25. f. A. T. fasciis roseis.* Habitat in O. Indico. Dens lateralis ante vulvam poneque anum triangulus.

1116. ANGULATA. 47. T. testa subovata striis transversis recurvatis, antice angulata, dentibus lateralibus nullis. Habitat in Java. Affinis T. virgatae, sed minus oblonga, alba, immaculata nec radiata; an-

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TELLINARUM testae antice inflexae, ut altera testa plicam convexam, altera vero cavam ostendat; in suborbiculatis autem vix plica manifesta, sed striae in eodem loco divergentes genus ostendunt.

gulo antico magis extrorsum sito et imprimis defectu dentium lateralium. Anus ovalis, nec solis marginibus inflexis.

1117. GARI. 48. T. testa ovali: striis transversis recurvatis, dentibus lateralibus obsoletis. *M. L. U.* 478. n. 22.\*—*Rumph. mus. t.* 45. f. D. *Tellina gari*.—*Argenv. conch. t.* 25. f. I. Habitat in O. Indico.

1117. FRAGILIS. 49. T. testa ovata alba gibba: striis transversis recurvatis, natibus flavescentibus. Habitat in O. Europæo. Testa magnitudine extimi pollicis, gibba, striis subscabris.

\*\* *Ovata, compressæ.*

1117. ALBIDA. 50. T. testa ovali lævi, nymphis prominentibus. *M. L. U.* 479. n. 23.\* Habitat in Oceano Europæo. Cardo absque dentibus marginalibus. Sutura ante et post cardinem notata lineis transversis rufis.

1117. FOLIACEA. 51. T. testa ovali, pube scabra, rima serrata. *M. L. U.* 479. n. 24.\*—*Rumph. mus. t.* 45. f. K. *Folium*.—*Argenv. conch. t.* 25. f. E.—*Klein. ostr. t.* 11. f. 64. Habitat in O. Indico.

1117. PLANATA. 52. T. testa ovata compressa, transversim substriata lævi: marginibus acutis, pube subtomentosa. *M. L. U.* 480. n. 25.\*—*Gualt. test. t.* 89. f. G.—*Regenf. conch. t.* 3. f. 28. Habitat in O. Europæo, Mediterraneo. Testa maxime plana, pellucida, incarnata, minus flexa, margine acutissimo.

1117. LÆVIGATA. 53. T. ovata lævigata, dentibus lateralibus marginatis, pube striato-scabra, nymphis inflexis. *M. L. U.* 480. n. 26.\*—*Rumph. mus. t.* 45. f. I. *Tellina lævis*. Habitat in O. Europæo et Indico.

1117. RADIATA. 54. T. testa oblonga longitudinaliter subtilissime substriata nitida, sutura anali canaliculata. *M. L. U.* 481. n. 27.\*—*Fn. suec.* 2132.\* Habitat in Oceano Europæo. Testa alba radiis incarnatis, obsoletissime striata. Rima Nymphis hiantibus nec promi-nulis.

1118. ROSTRATA. 55. T. testa oblonga: antice angulato-rostrata, angulis subdentatis. *M. L. U.* 481. n. 28.\*—*Argenv. conch. t.* 25. f. O. Habitat in O. Indico: Java.

1118. INÆQUIVALVIS. 56. T. testa oblongo-rostrata: valvula altera plana. Habitat in M. Mediterraneo. Testa longitudine pollicis transversa, lactea, lævis, pellucida. Sutura dorsalis recta excurrens in rostrum obtusum patulum. A natibus ad rostri inferiora angulus obliquus ut in Tellinis. Valvula altera plana; altera leviter convexa. Cardo dentibus duobus absque lateralibus.

1118. TRIFASCIATA. 57. T. testa ovata læviusecula sanguineo-tri-radiata, pube rugosa. *Fn. suec.* 2133.—*List. angl. app.* 32. f. 8. Habitat in O. Europæo. Testa magnitudine unguis, pallida: radiis 3 sanguineis a cardine ortis, antice magis obtusa; vulva ovata.

1118. INCARNATA. 58. T. testa ovata antice productiore compresso-planiuscula, natibus submucronatis. *Fn. succ.* 2134.\*—*List. angl. app.* 32. t. 1. f. 8.—*Gualt. test. t.* 88. f. M. Habitat in O. Europæo, Mediterraneo. Testa magnitudine extimi pollicis, simillima T. planatæ, sed incarnata radio uno alterove pallido. Nates acutiusculæ.

1118. DONACINA. 59. T. testa ovata compresso-planiuscula læviuscula: antice obtusissima. *Gualt. test. t.* 88. f. N. Habitat in M. Mediterraneo. Testa simillima T. incarnatæ, sed minor, purpurascens radiis plurimis rubris. Regio vulvæ obtusissima et fere truncata, ut in Donace.

1118. TRUNCATA. 60. T. testa ovali compressa substriata, parte antica truncata suturaque distincta. Habitat in Java. Testa similis T. incarnatæ, sed violacea, magis fragilis, apice anteriore fere truncato. Regionem anteriorem distinguit linea elevata: dentes omnes emarginati.

1119. BALAUSTINA. 61. T. testa dilatato-orbiculata læviuscula, valvula altera dentibus lateralibus. Habitat in M. Mediterraneo. *J. T. Fagræus*. Testa magnitudine seminis Lupini albi, fere orbicularis, sed paulo magis dilatata, albida radiis obsoletis rufis.

\*\*\* *Suborbiculatæ.*

1119. REMIES. 62. T. testa suborbiculata compressa rugosa. *M. L. U.* 482. n. 29.—*Rumph. mus. t.* 43. f. I. *Remies*.—*Gualt. test. t.* 76. f. F. Habitat in O. Europæo et Indico.

1119. RETICULATA. 63. T. testa lentiformi compressa reticulata. *Rumph. mus. t.* 43. f. E. Habitat in India. *Tesdorff*. Testa alba: striis longitudinalibus crispis striisque transversis elevatis lynceo tantum videndis reticulata. Anus cordatus, impressus, brevissimus.

1119. SCOBINATA. 64. T. testa lenticulari scabra: squamis lunatis quincuncialibus. *M. L. U.* 482. n. 30.\*—*Gualt. test. t.* 76. f. E. Habitat in O. Asiatico. Ani fossula oblonga, nec labia canaliculata.

1119. LACTEA. 65. T. testa lentiformi gibba alba pellucida lævi. *Gualt. test. t.* 71. f. D. Habitat in M. Mediterraneo. Testa semine Lupini albi major, parum transversim obsolete striata.

1119. CARNARIA. 66. T. testa suborbiculata lævi utrinque incarnata oblique striata: striis hinc reflexis. *List. angl.* 175. t. 4. f. 25.—*Gualt. test. t.* 77. f. I. Habitat in Oceani brevibus. Testa magnitudine seminis Lupini albi, nonnihil compressa.

1120. BIMACULATA. 67. T. testa triangulo-subrotunda latiore lævi albida: intus maculis duabus sanguineis oblongis. *Fn. succ.* 2135. Habitat in O. Europæo. Testa vix extimi pollicis magnitudine, extus alba, sed maculæ interiores parum pellucent; lævis nisi striis aliquot obsoletis circumdata esset. Flexura testæ in hac non manifesta.

1120. BALTHICA. 68. T. testa subrotunda lævi extus incarnata.

*Fn. suec.* 2136.\*—*It. orland.* 43. Habitat in M. Balthico. Testa seminis Lupini albi magnitudine; molliuscula, fragilissima; intus alba, extus incarnata; e triangulo rotundata.

1120. PISIFORMIS. 69. T. testa subglobosa lævi, intus incarnata, oblique substriata: striis antice angulo acuto reflexis. *Fn. suec.* 2137.—*Gualt. test. t. 7. f. G.* Habitat ad O. Europæi ostia fluviorum. Testa magnitudine Pisi, alba, fundo purpureo, striata. Striis vix oculo nudo manifestis, obliquis, sed anterieus reflexis ad angulum acutum. Cardinis dens unicus præter laterales prominulos. Rarius tota alba reperitur.

1120. DIVARICATA. 70. T. testa subglobosa alba bifariam oblique striata. Habitat in M. Mediterraneo. *F. Logie.* Testa magnitudine Pisi, subcompresso-globosa, gibba. Striæ tenuissimæ, bifariam ad utrumque latus ductæ.

1120. DIGITARIA. 71. T. testa subglobosa pallida cincta striis obliquis uniformibus. Habitat in M. Mediterraneo. *Logie.* Testa magnitudine Pisi, albida, interdum maculis undatis rufis. Striæ transversæ, sed pulchre obliquæ, sensim desinentes ad marginem exteriorem, uti striæ in apice digitorum, unde apparet spiraliter striata.

1120. CORNEA. 72. T. globosa glabra cornei coloris: sulco transversali. *Fn. suec.* 2138.\*—*List. angl. app.* 22. t. 1. f. 5. Habitat in Europæ paludibus, stagnis. Testa magnitudine pisi, rudis, cornu coloris; at in Islandia quadruplo major.

306. CARDIUM. Animal Tethys. Testa bivalvis, subæquilatera, æquivalvis. Cardo dentibus mediis binis alternatis; lateralibus remotis insertis.

1121. COSTATUM. 73. C. testa gibba æquivalvi: costis elevatis carinatis concavis membranaceis. *M. L. U.* 483. n. 31.\*—*Column. purp.* 26. t. 27.—*Rumph. mus. t. 48. f. 6.*—*List. conch.* 1. t. 327. f. 164.—*Gualt. test. t. 72. f. D.*—*Argenv. conch. t. 26. f. A.* *Concha exotica.*—*Adans. seneg.* 1. t. 18. f. 2. Habitat in M. Africano.

1121. CARDISSA. 74. C. testa cordata: valvulis compressis dentato-carinatis, natibus approximatis. *M. L. U.* 484. n. 32.\*—*Column. aqu.* 16.—*Rumph. mus. t. 42. f. E.* *Cardissa.*—*Gualt. test. t. 84. f. B, C, D.*—*Argenv. conch. t. 26. f. I.* *Cor veneris.*—*Klein. ostr. t. 10. f. 39.* Habitat in O. Asiatico. Variat testa lateribus utrinque planis aut altera concava.

1121. RETUSUM. 75. C. testa cordata: valvulis striatis crenulatis subcarinatis, ano lunato cordiformi intruso. Habitat in India. *Sprengler.* Testa inter Hemicardium et Fragum media, lactea. Valvulæ angulo

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CARDIORUM cardines dentibus lateralibus remotis instruuntur, qui foraminulo s. serobiculo oppositæ valvulæ inseruntur, dum testa clauditur, quod non obtinet in Tellinis.

subcarinatae, striatae et transversim crenulatae. Anus profunde intrusus sinu lunari. Margo plicato-dentatus.

1121. HEMICARDIUM. 76. C. testa cordata subquadrilatera: valvulis carinatis, natibus distantibus. *M. L. U.* 484. n. 33.\*—*Rumph. mus. t.* 44. f. H.—*Gualt. test. t.* 83. f. C. Habitat in O. Asiatico.

1122. MEDIUM. 77. C. testa subcordata subangulata: valvulis angulatis sulcatis laevibus. *M. L. U.* 485. n. 34.\* Habitat in O. Indico. Testa simillima priori, sed exalbido-purpurascens varia, sulcis laevibus absque aculeis, angulisque obsoletis.

1122. ACULEATUM. 78. C. testa subcordata: sulcis convexis lineae exaratis: exterius aculeato-ciliatis. *M. L. U.* 485. n. 35.\* *Cardium muricatum*.—*Bonan. recr. 2. t.* 96, 97.—*Gualt. test. t.* 72. f. A.—*Argenv. conch. t.* 26. f. B. *Cor bovis*. Habitat in O. Europæo australi. Maxime affinis sequenti et forte varietas.

1122. ECHINATUM. 79. C. testa subcordata: sulcis exaratis lineae ciliata aculeis inflexis plurimis. *Fn. suec.* 2139.\*—*M. L. U.* 486. n. 36.\*—*Rond. test. 22. Concha echinata*.—*List. angl. t.* 5. f. 33; *conch. t.* 324. f. 161.—*Bonan. recr. 2. t.* 90.—*Gesn. aquat.* 131, 132.—*Gualt. test. t.* 72. f. B.—*Klein. ostr. t.* 10. f. 40.—*Ginan. adr. 2. t.* 19. f. 130. Habitat in O. Septentrionali.

1122. CILIARE. 80. C. testa subcordata: sulcis elevatis triquetris: extimis aculeato-ciliatis. *Gualt. test. t.* 72. f. C. Habitat in M. Mediterraneo. Simillima duobus præcedentibus, sed minor et nivea. Sulci triquetri, latere scilicet altero adnato.

1122. TUBERCULATUM. 81. C. testa subcordata: sulcis obtusis nodosis transversim striatis. *M. L. U.* 486. n. 37.\*—*Rumph. mus. t.* 48. f. 11.—*Argenv. conch. t.* 26. f. L. Habitat . . .

1122. ISOCARDIA. 82. C. testa cordata: sulcis squamis fornicatis imbricatis. *M. L. U.* 487. n. 38.\*—*Rumph. mus. t.* 48. f. 9.—*Argenv. conch. t.* 26. f. M.—*Regenf. conch. 20. t.* 5. f. 56. Habitat . . .

1123. FRAGUM. 83. C. testa subcordata subangulata: sulcis notatis lunulis elevatis. *M. L. U.* 488. n. 39.\*—*Rumph. mus. t.* 44. f. G. *Fragum album*.—*Gualt. test. t.* 71. f. N. Habitat in O. Asiatico, Americano.

1123. UNEDO. 84. C. testa subcordata: sulcis lunulis coloratis. *M. L. U.* 488. n. 40.\*—*Bonan. recr. 3. t.* 375.—*Rumph. mus. t.* 44. f. F.—*Argenv. conch. t.* 26. f. N. *Fragum*.—*Gualt. test. t.* 83. f. A, B.—*Regenf. conch. 12. t.* 3. f. 25. Habitat . . . Vulvæ labium alterum alteri incumbit, quod vix in præcedenti, cui maxime affinis, sed sæpe decuplo major.

1123. MURICATUM. 85. C. testa subcordata sulcata lateribus muricata. *M. L. U.* 489. n. 41.\* Habitat ad sinum Campechiensem. Testa præcedentibus similis, margine undique serrata, extus flavescens; intus umbonibus purpurascens.

1123. MAGNUM. 86. C. testa oblonga: sulcis angulatis latere serratis. *M. L. U.* 489. n. 42.\* Habitat ad Jamaicam.

1123. FLAVUM. 87. C. testa subovata sulcata: latere anteriore scabro, posteriore dentato. *M. L. U.* 490. n. 43.\* Habitat . . . Testa subovata, flava, latere anteriore alba. Sulci crenati nodulis in latere posteriore; margo non rubens.

1123. LÆVIGATUM. 88. C. testa obovata: striis obsoletis longitudinalibus. *M. L. U.* 490. n. 44.\* Habitat . . . Testa simillima præcedenti, sed striæ loco sulcorum.

1123. SERRATUM. 89. C. testa obovata lævi: striis obsoletis, margine interiore serrato. *M. L. U.* 491. n. 45.\* Habitat in M. Mediterraneo. Testa flava, versus cardinem gibba, margine exteriori crenulato, anteriore serrato. Nates regulares.

1124. EDULE. 90. C. testa antiquata: sulcis XXVI. obsolete recurvato-imbricatis. *Fn. suec.* 2141.\*—*It. æl.* 42.—*Baster. subs.* 2. p. 72. t. 8. f. 3, 4.—*List. angl.* 189. t. 5. f. 34.—*Gualt. test.* 71. f. F. Habitat in O. Europæo.

1124. RUSTICUM. 91. C. testa antiquata: sulcis XX. remotis interstitiis rugosis. *Rond. test.* 1. p. 21. c. 19. Concha striata.—*Rumph. mus.* t. 44. f. K.—*Gualt. test.* t. 71. f. M.—*Regenf. conch.* t. 8. f. 23, 24, et t. 12. f. 77, 78. Habitat in M. Mediterraneo et Europæ australioris. Testa aliis ferruginea fasciis lividis; aliis minor nivea fasciis ferrugineis.

1124. PECTINATUM. 92. C. testa subcordata pectinata. *M. L. U.* 492. n. 47.\*—*Gualt. test.* t. 75. f. A. Habitat in M. Mediterraneo. Testæ striæ distantes sursum scabræ; cavitas sub umbonibus flava. Anus ovatus, impressus marginibus prominulis.

1124. VIRGINEUM. 93. C. testa triangulo-rotundata æquilatera: rugis transversis membranaceo-recurvatis, cardinibus cæruleis. Habitat in M. Mediterraneo. Testa pulchella, fasciata lineis retrorsum imbricatis, remotis, epidermide glauca oblecta. Cavitas alba, sed cardines cærulei: dentibus lateralibus longitudinalibus linearibus fere Mactræ, sed cardo Cardii.

307. MACTRA. Animal Tethys. Testa bivalvis, inæquilatera, æquivalvis. Cardo dente medio complicato cum adjecta foveola; lateralibus remotis insertis.

1125. SPRENGLERI. 94. M. testa lævi, vulva plana: rima lunula

*Antiquata* testa nobis, quæ longitudinaliter sulcata, sed transversis appositionibus annotinis quasi intercepta.

*Pectinata* mihi, quæ longitudinaliter sulcata l. striata, at vero antice striis l. sulcis ad angulum acutum divergentibus.

*Longitudinalis* testa a natibus ad marginem.

*Transversalis* vero a natibus ad nates arcu margini parallelo.

hiantē. Habitat ad Cap. b. Spei. *Laur. Sprengler.* Testa magnitudine fere manus, lævis, subtriangularis, pallida, subdiaphana. Latus anteriorius angulo subcarinatum distinctum a limbis. Vulva ad nates lunata, acuta, tota hians in fossulam cardinis. Latus posteriorius planiusculum, striatum. Nates incurvæ. Dentes laterales cardinis trianguli.

1125. *PLICATARIA*. 95. *M.* testa transverse rugoso-plicata diaphana, vulva planiuscula, ano compresso oblongo. Habitat in Java. Testa latitudine ovi, alba, tenuis instar papyri, transversaliter plicata rugis parallelis. Vulva planiuscula, lanceolata, carina ab umbonibus distincta, lævis. Anus ovato-lanceolatus, magis impressus, lævis. Cardinis dentes laterales ex duobus parallelis membranis. Nates incurvæ, recurvatæ.

1125. *STRIATULA*. 96. *M.* testa lævis diaphana, umbonibus substriatis, vulva lævi impressa carina circumscripta. Habitat in M. Mediterraneo. Testa alba, latitudine juglandis. Vulva lanceolata, in medio longitudinaliter impressiuscula, lævis, carina utrinque distincta. Umbones striati.

1125. *GLABRATA*. 97. *M.* testa lævi diaphana striata, umbonibus lævissimis, vulva anoque striatis. Habitat in O. Africano. Testa magnitudine *N. coryli*, alba. Nates et umbones lævissimi, glaberrimi, nec striati. Limbus striatus. Vulva nulla carina distincta.

1125. *CORALLINA*. 98. *M.* testa lævi subdiaphana alba, fasciis lacteis. *Bonap. recr.* 3. t. 5-2.—*Rond. test.* 1. p. 32. t. 33.—*Gualt. test.* t. 71. f. B.—*Planck. conch.* t. 3. f. 4? Habitat in M. Mediterraneo.

1126. *STULTORUM*. 99. *M.* testa subdiaphana lævi obsolete radiata, intus purpurascente, vulva gibba.—*Syst. nat.* 10. p. 681. n. 8. *Cardium stultorum*. Habitat in O. Europæo. Variat colore fusco, cinereo, testaceo, sæpius pallido radiata.

1126. *SOLIDA*. 100. *M.* testa opaca læviuscula subantiquata. *Fn. succ.* 2140. *Cardium solidum*.—*Bonap. recr.* 3. t. 51.—*Rond. test.* 1. c. 7.—*List. angl.* 174. t. 4. f. 24. Habitat in O. Europæo. Testa crassa, alba s. flavescens, sæpe cingulis lacteis subimbricata et fere antiquata. Cardo dentibus lateralibus minus elongatis: foveola major quam in reliquis et dens intermedius minor.

1126. *LUTRARIA*. 101. *M.* testa ovali oblonga lævi, dentibus lateralibus nullis. *Mya lutraria*. *Fn. succ.* 2128.—*M. L. U.* 470. n. 9.—*List. angl.* 170. t. 4. f. 19.—*Bonap. recr.* 2. t. 19.—*Rumph. mus.* t. 45. f. M. Habitat ad ostia fluviorum Oceani Europæi. Cardo destituitur dentibus lateralibus, quibus a congeneribus tantum differt.

308. *DONAX*. Animal Tethys. Testa bivalvis, margine antico obtusissimo. Cardo dentibus duobus; marginalique solitario, subremoto, sub ano.

1126. *SCORTUM*. 102. *D.* testa triangulo-cordata, vulva plana.



*M. L. U.* 493. *n.* 48.\*—*Gualt. test. t.* 85. *f. F.*—*Argenv. conch. t.* 24. *f. L.* Habitat in America.

1127. PUBESCENS. 103. D. testa antice spinis ciliata. *M. L. U.* 493. *n.* 49.\* Habitat in O. Indico. Testa argute decussatim striata: antice plana laterum angulo carinato, versus apicem spinis e striis enatis membranaceis ciliato. Rima hians ovata: nymphis nudis. Anus ovato-oblongus.

1127. RUGOSA. 104. D. testa antice rugosa gibba, marginibus crenatis. *M. L. U.* 494. *n.* 50.\*—*Gualt. test. t.* 89. *f. D.* Habitat in O. meridionali.

1127. TRUNCULUS. 105. D. testa antice lævi, intus violacea, marginibus crenatis. *Fn. suec.* 2142. *M. L. U.* 494. *n.* 51.\*—*List. angl.* 190. *t.* 5. *f.* 35.—*Bonan. recr. 2. t.* 47.—*Klein. ostr. t.* 11. *f.* 61.—*Adans. seneg. 1. t.* 18. *f.* 1.—*Gualt. test. t.* 88. *f. O.*—*Argenv. conch. t.* 25. *f. L.* Habitat in Oceano Europæo.

1127. STRIATA. 106. D. testa antice obtusissima undique striata, margine denticulato, vulva ovata. Habitat in Europæ australis Oceano. Reliquis magis gibba et tota, exceptis natibus, striata, et alba.

1127. DENTICULATA. 107. D. testa antice obtusissima, labiis transverse rugosis, margine denticulato, nymphis dentiformibus. Habitat in M. Mediterraneo. *F. Logie.* Testa cuneiformis, lævis, longitudinaliter punctato-striata, albida, purpurascenti-subfasciata. Vulva subrotunda, minima; antice obtusissima, arca media transverse rugosa, laterali recta; margo denticulatus. Intus albicans.

1127. CUNEATA. 108. D. testa cuneiformi, marginibus integerrimis. *M. L. U.* 495. *n.* 52.\* Habitat . . . Testa parva, ovata, compressa, violacea s. vario colore.

1127. SCRIPTA. 109. D. testa ovata compressa lævi, scripta lineis purpureis undatis, rima acuta, marginibus crenulatis. *M. L. U.* 495. *n.* 53.\*—*Rumph. mus. t.* 43. *f. L, M.* *Literata Xylanensis.*—*Gualt. test. t.* 88. *f. Q.*—*List. conch. t.* 379. *f.* 222.—*Bonan. recr. 2. t.* 43.—*Klein. ostr. t.* 11. *f.* 59. Habitat in M. Mediterraneo.

1128. MURICATA. 110. D. testa ovata: striis muricatis, margine denticulato. *M. L. U.* 496. *n.* 54.\* Habitat in O. Indico. Testa gibba, rufescens; margo anterior denticulatus. Rima hians, terminata antice utrinque dente compresso. Anus nullus.

1128. IRUS. 111. D. testa ovali, rugis membranaceis erectis striatis cincta. *Gualt. test. t.* 95. *f. A.* Habitat in M. Mediterraneo. *Brander.* Testa magnitudine Phaseoli, ovalis, alba, antice obtusissima, rugosa: rugis arcuatis, membranaceis, reflexo-erectis, striatis, fere crispis, exterioribus sensim anterioribus majoribus. Cardo utrinque dentibus duobus minimis; altero bifido.

309. VENUS. Animal Tethys. Testa bivalvis, labiis margine antico incumbentibus. Cardo dentibus 3: omnibus approximatis, lateralibus apice divergentibus. Vulva et anus distincta.

\* *Pubentes.*

1128. DIONE. 112. V. testa subcordata transverse sulcata, pube spinosa. *M. L. U.* 497. n. 55.\*—*List. conch. t.* 307. f. 140.—*Rumph. mus. t.* 48. f. 4.—*Olear. mus.* 29. f. 4.—*Pet. gaz. t.* 31. f. 9.—*Gualt. test. t.* 76. f. D.—*Argenv. conch. t.* 24. f. I. *Concha veneris occidentalis.* Habitat in O. Americæ. Venerem filiam Dionis s. e concha maris natam finxere poëtæ; hujus typus præcipue determinabit concharum partium metaphoricam denominationem. Testa bivalvis, æquivalvis, semicordata, rotundata, subincarnata, postice anticeque magis gibba, umbonibus undique exaratis striis transversis, distantibus, parallelis, marginatis, subrecurvatis, æqualibus: exterioribus obtusioribus: posterioribus alternis altioribus acutioribusque, alternisque abbreviatis minoribus. Intus lævis, alba, sub umbonibus fornicata. Cardo sinistræ tridentatus: dentibus approximatis, scrobiculo distinctis; denticulo intermedio compresso, angustiore: lateralibus divergentibus, crassiusculis, obtusis. Dextræ cardo denticulis duobus, approximatis, compressis, inter scrobiculos duos. Margo ambitus obtusissimus, integerrimus: nates recurvatæ, obtusiusculæ, apice glabræ. Anus impressus, ovatus, lævis, incarnatus. Antice pubes ciliaris, utrinque, e natibus ad summum montis veneris, cingens vulvam spinis e striis alternis tertiisve testæ ortis, subulatis, depressis, adscendentibus, antrorsum arcuatis, subtus canaliculatis, superioribus sensim longioribus: longissimis longitudine ipsius rimæ. Vulvæ regio incarnata, oblique striata sursum a rima ad pubem. Labia læviora incarnata, inclusa fascia pallida, armata a natibus ad medium rimæ. Aculeis utrinque quinque brevissimis; margo vulvæ supra rimam connivet sulco longitudinali, intra quem sinistræ margo gibbosior se insinuat. Rima lanceolata, hians labris prominulis, clausa hymene. Nymphæ cartilagineæ, retractiores, longitudine rimæ.

1129. PAPHIA. 113. V. testa subcordata, rugis incrassatis, pube rugis attenuatis, labris complicatis. *Bonan. recr. 2. t.* 75.—*Rumph. mus. t.* 48. f. 5.—*Gualt. test. t.* 85. f. A.—*Argenv. conch. t.* 24. f. B.—*Regenf. conch. t.* 7. f. 11. Habitat in O. Lusitanico. Affinis adeo Dyseræ, ut multis examinatis specimenibus vix ac vix limites dentur.

1130. MARICA. 114. V. testa subcordata decussatim striata, pube lamellosa. *M. L. U.* 497. n. 56.\* Habitat in O. Americæ.—Proxima huic est *Argenv. conch. t.* 24. f. B.

1130. DYSERA. 115. V. testa subcordata: sulcis transversis remotis reflexis, margine crenulato. *M. L. U.* 498. n. 57.\*—*List. conch. t.* 278. f. 115, 122, 123.—*Pet. gaz. t.* 93. f. 17.—*Argenv. conch. t.* 24. f. K. *Concha Veneris orientalis.*—*γ. List. conch. t.* 277. f. 114.—

*Klein. ostr. t. 10. f. 48, 49.*—*δ. Argenv. conch. t. 24. f. Q.* Habitat in O. Americæ, Asiæ.

*\*\* Impuberes, subcordatæ.*

1130. VERRUCOSA. 116. V. testa subcordata: sulcis membranaceis striatis reflexis, antice imprimis verrucosis, margine crenulato.—*Gualt. test. t. 75. f. 11.* Habitat in Europa australi. Statura et maculis ad Paphiam accedit, ut forte varietas lævigata.

1130. CASINA. 117. V. testa subcordata: sulcis transversis recurvis acutis, margine postico crenulato: pone anum canaliculato. Habitat in O. Europæo, frequenter etiam fossilis.

1130. CANCELLATA. 118. V. subcordata, striis transversis membranaceis remotis, ano cordato. *M. L. U. 506. n. 71.\*—Gualt. test. t. 88. f. D.* Habitat in Oceano Africano. Testa cinerea, leviter striata a natibus ad marginem. Striæ transversæ, remotæ, elevatæ, membranaceæ, erecto-patentes. Anus cordatus. Margo subcrenulatus. Variat striis longitudinalibus et absque his striis.

1130. GALLINA. 119. V. testa subcordata radiata: striis transversis obtusis, cardinis dente postico minimo, margine crenulato. *Fn. suec. 2143.—Bonan. recr. 2. t. 64, 65.* Habitat in M. Mediterraneo, Norvegico, Asiatico. Testa colore varians, sæpe glaberrima licet striata; striæ apparent crenulatæ, quamvis non sint.

1131. PETULCA. 120. V. testa subcordata subsulcata, margine crenulato, rima subovata hiant, nymphis acutis. Habitat in O. Europæ australioris. Testa magnitudine Avellanæ, albo fuscoque nebulosa. Anus oblongus.

1131. FLEXUOSA. 121. V. testa subcordata: sulcis transversis obtusis, vulvæ labiis angulo elevato distinctis. *Rumph. mus. t. 43. f. O.* Habitat in Indiis. *D. C. Solander.* Testa magnitudine seminis Æsculi, albida, rufo punctata. Striis transversis vix crenatis, obtusis, juxta vulvam sæpe bifidis. Vulva retusa, rufa, oblique striata angulis lateralibus elevatis et gibbis. Margo vix manifeste crenulatus, juxta vulvam inflexus.

1131. ERYCINA. 122. V. testa cordata transversim parallele sulcata, sulcis obtusissimis, vulva glabra, ano ovato. Habitat in Europa. *J. Theod. Fagræus.* Simillima Chioni, sed sulcis numerosis profundioribus.

1131. MERCENARIA. 123. V. testa cordata solida transverse substriata lævi, margine crenulato, intus violacea, ano ovato. *Fn. suec. 2144.—List. angl. 229. t. 4. f. 22.* Habitat in Pennsylvania. *P. Kalm:* e qua sylvestrium nummi parantur. In Norvegia copiose ad ostia maris; editur a Pennsylvanis. In montibus Sueciæ fossilis. Testa præ reliquis crassa est et ponderosa. Limbus tantum testæ interne violaceus est.

1131. ISLANDICA. 124. V. testa cordata transversim striata rudi,

nymphis hiantibus, ano nullo. *Zoega*. Habitat in Islandia. Similis *V. mercenariæ*, sed vix ovo gallinaceo major, colore alba.

1131. *CHIONE*. 125. *V.* testa cordata tranverse subrugosa lævi, cardinis dente posteriori lanceolato. *M. L. U.* 500. *n.* 58.\*—*Rumph. mus. t.* 42. *f. G.*—*Gualt. test. t.* 86. *f. A.*—*Argenv. conch. t.* 24. *f. C.*—*Regenf. conch. t.* 8. *f.* 17. Habitat in O. Asiatico, forte etiam in Europæo. Testa magnitudine fere ovi gallinacei, alba aut subferruginea; margo integerrimus est.

1132. *MACULATA*. 126. *V.* testa cordata lævi: maculis exoletis sparsis. *M. L. U.* 500. *n.* 59.\*—*List. conch. t.* 270. *f.* 106.—*Adans. seneg. l. t.* 17. *f.* 15.—*Gualt. test. t.* 86. *f. I.*—*Argenv. conch. t.* 24. *f. H.*—*Regenf. conch. t.* 8. *f.* 16. Habitat in O. Americano, Africano. Variat magis minusque oblonga.

1132. *MERETRIX*. 127. *V.* testa cordata glabra, vulva fusca gibba, nymphis hiantibus. *M. L. U.* 501. *n.* 60.\*—*Argenv. conch. t.* 24. *f. F.* Habitat in O. Indico.

1132. *LÆTA*. 128. *V.* testa subcordata tumida glaberrima albo radiata, labiis subviolaceis. *Gualt. test. t.* 88. *f. V.* Habitat in M. Mediterraneo et Indico. Testa flavescens, nitidissima, radiis aliquot latis albis depicta. Labia obscuriora. Anus ovatus.

1132. *CASTRENSIS*. 129. *V.* triangulo-rotundata gibba glaberrima characteribus angularibus inscripta. *M. L. U.* 501. *n.* 61.\*—*List. conch. t.* 262. *f.* 98.—*Bonan. recr. 2. t.* 376.—*Rumph. mus. t.* 42. *f. K.* *Chama optica.*—*Gualt. test. t.* 82. *f. H.*—*Regenf. conch. 2. t.* 1. *f.* 3, 4, et *t.* 4. *f.* 41. Habitat in O. utriusque Indiæ.

1132. *PHRYNE*. 130. *V.* testa subcordata lævi antice posticeque tranverse striata, ano obcordato venis violaceis. Habitat in O. australiori.

1132. *MEROË*. 131. *V.* testa ovata compressa tranverse striata, sutura postica hiante. *M. L. U.* 502. *n.* 62.\* Habitat in O. australiori. Testa alba venis leucophæis. Nates remotæ. Sutura hians pone anum oblongum, obsoletum. Vulva excisa. Affinis plurimum *Donaci* scriptæ.

1133. *DEFLORATA*. 132. *V.* testa ovali longitudinaliter rugosa antice violacea nymphis atris. Habitat in O. Europæo. Testa latitudine ovi, a cardine ad peripheriam rugosa, albida. Latus antierius, præsertim interne, violaceum.

1133. *FIMBRIATA*. 133. *V.* testa ovali gibba longitudinaliter striata, tranverse sulcata, margine crenulato. *M. L. U.* 502. *n.* 63.\*—*List. conch. t.* 336. *f.* 172.—*Rumph. mus. t.* 43. *f. F.*—*Gualt. test. t.* 75. *f. G.*—*Argenv. conch. t.* 24. *f. C.* *Chama scobinata.*—*Klein. ostr. t.* 10. *f.* 52. Habitat in O. Indiæ orientalis.

1133. *RETICULATA*. 134. *V.* testa subcordata: striis elevatis decussatis, ano cordato, margine integro. *M. L. U.* 503. *n.* 64.\*—*Bonan.*

*recr. 2. t. 69.—List. conch. t. 337. f. 174.—Gualt. test. t. 77. f. A.—Adans. seneg. 1. t. 16. f. 3.—Argenv. conch. t. 26. f. F.* Habitat in O. Africano.

1133. SQUAMOSA. 135. V. testa subcordata reticulato-striata retrorsum squamosa. *Rumph. mus. t. 44. f. M.* Habitat in O. Indico.

\*\*\* *Impuberes, orbiculatæ.*

1133. TIGERINA. 136. V. testa lentiformi: striis crenatis decussatis, ano impresso ovato. *M. L. U. 503. n. 65.\*—Rumph. mus. t. 43. f. H.* Habitat in O. Indico.

1133. PROSTRATA. 137. V. testa orbiculata transverse striata, labiis scabro-membranaceis. *M. L. U. 504. n. 66.\** Habitat in O. Indico. Tranquebar. Testa subscabra, exolete testacea radiis albis. Nates reflexæ. Rima oblonga, patula. Anus cordatus.

1134. PENNSYLVANICA. 138. V. testa lentiformi glabro-rugosa alba, antice utrinque sulco longitudinali. *M. L. U. 504. n. 67.\*—Argenv. conch. t. 24. f. N. Chama ex Jamaica.* Habitat in America septentrionali.

1134. INCRUSTATA. 139. V. testa lentiformi glaberrima lævissima punctis excavata. *M. L. U. 505. n. 68.\** Habitat in O. Indico. Testa intus crusta crassa albida. Ani vestigium foramine rotundo sub natibus.

1134. PUNCTATA. 140. V. testa lentiformi longitudinaliter sulcata, intus punctata. *M. L. U. 505. n. 69.\*—Rumph. mus. t. 43. f. G.* Habitat in O. Indico. Testa intus obducta crusta crassa albida, sed punctata. Anus ut in præcedente.

1134. TIGERINA. 141. V. testa lentiformi decussatim striata, ano ovato impresso. *M. L. U. 503. n. 65.\*—Rumph. mus. t. 43. f. H.—β. Venus orbicularis. Syst. nat. 10. p. 688. n. 118.* Habitat intra Tropicos. Testa interne, ad anum et rimam rufescens.

1134. EXOLETA. 142. V. testa lentiformi transversim striata pallida, obsolete radiata, ano cordato. *Fn. suec. 2145.—M. L. U. 506. n. 70.\*—List. conch. t. 262. f. 98.—Pet. gaz. 291. f. 127.—Gualt. test. t. 75. f. F, G.—Adans. seneg. 1. t. 16. f. 4.—β. Syst. nat. 10. p. 689. n. 123. Venus Lupinus.* Habitat ad Garnsey; in Norvegia. Testa intus crusta crassa albida. Anus ferrugineus; valde affinis 139, 140.

1134. BOREALIS. 143. V. testa lentiformi: striis transversis membranaceis erectis remotissimis. *List. angl. 174. t. 4. f. 23.* Habitat in Oceano Europæo. Testa alba, angulata, ad rimam recta et quasi truncata; striæ inæquales, membranaceæ.

1135. PECTINATA. 144. V. testa sublentiformi, sulcis longitudinalibus rugosis, pube antrorsum ramosa. *M. L. U. 507. n. 72.\*—Rumph.*

*mus. t. 42. f. D.*—*Gualt. test. t. 72. f. F, E.*—*Argenv. conch. t. 24. f. P.* Habitat in Indiis.

1135. SCRIPTA. 145. V. testa lentiformi compressa striata postice angulo recto angulata. *M. L. U. 507. n. 73.\**—*Rumph. mus. t. 43. f. C.* *Chama literata rotunda.*—*Gualt. test. t. 77. f. C.*—*Argenv. conch. t. 24. f. M.* *Chama optica.* Habitat in Indiis. Impressio ani lanceolata.

1135. EDENTULA. 146. V. testa lentiformi subgloboso-lenticulata rugosa edentula; ano ovato. *M. L. U. 508. n. 74.\** Habitat in Indiis. Testa subglobosa, diaphana, alba. Anus ovato-acutus, valde excavatus, angulo acuto.

\*\*\*\* *Impuberes ovales, supra rimam subangulatæ.*

1135. LITERATA. 147. V. testa ovata antice angulata, striis transversis subundulatis. *Fn. succ. 2146.*—*M. L. U. 508. n. 75.\**—*Bonan. recr. 2. f. 67.*—*Rumph. mus. t. 43. f. B.* *Chama literata oblonga.*—*Gualt. test. t. 86. f. E, F.*—*Argenv. conch. t. 24. f. A.* *Chama literata.*—*Regenf. conch. 16. t. 4. f. 39.* Habitat in Europa et India. Color sæpe cinerascens, sed plurimum varians, sæpiusque characteribus notatus; variat etiam rugis antice longitudinalibus, in majoribus imprimis et Indiciis.

1135. ROTUNDATA. 148. V. testa ovata antice subangulata: striis transversis, cardinis dente intermedio bifido. *M. L. U. 509. n. 76.\** Habitat in O. Indico. Testæ anus ovato-lanceolatus, fuscus, retusus. Dentes cardinis utrinque tres: medio bifido.

1135. DECUSSATA. 149. V. testa ovata antice angulata decussatim striata. *M. L. U. 509. n. 77.\** Habitat in O. Indico. Testæ anus minimus, retusus, macula nulla impressa. Color intus albidus, sæpius cum tinctura crocea.

1136. VIRGINEA. 150. V. testa subovata antice subangulata, striis transversis inæquilineatis, vulva tumida. Habitat in Indiis. Similis fere V. decussatæ, sed magis rotunda, pallide incarnata, vix radiata, transverse striata, sed striæ versus vulvæ regionem sæpius confusæ. Vulvæ regio tumidior quam in reliquis, oblique striata.

310. SPONDYLUS. Animal Tethys. Testa inæquivalvis, rigida. Cardio dentibus 2 recurvis, cum foraminulo intermedio.

1136. GÆDEROPUS. 151. S. testa subaurita spinosa. *M. L. U. 510. n. 78.\**—*Bocc. observ. 1674. p. . . t. 304.* *Concha histicina.*—*Rond. pisc. 1. t. 40.*—*Rumph. mus. t. 47. f. E.*—*Bonan. recr. 2. t. 20, 21.*—*Gualt. test. 100, 101. f. A, B. t. 99. f. F, G.*—*Argenv. conch. t. 23. f. G, B, L.*—*Klein. ostr. t. 9. f. 37.*—*Regenf. conch. 16.*

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SPONDYLI tota sua structura testæ ad Ostreas accedunt, sed dentibus cardinis differunt, et spinis valvularum Chamas referunt.

*t. 4. f. 48.*—*Seb. mus. 3. t. 88. f. 1–11, et t. 89. f. 8, 7, 4.* Habitat in M. Mediterraneo, arcte adhærens scopulis. Natum altera longior, hinc plana, ac si arte secta aut abrasa fuisset.

1136. REGIUS. 152. S. testa inaurita spinosa. *M. L. U. 511. n. 79.\**—*Rumph. mus. 156. n. 8.* Habitat in India. Simillima præcedenti, sed major spinis et sulcis validioribus; forte insignis tantum varietas.

1136. PLICATUS. 153. S. testa inaurita mutica plicata. *M. L. U. 511. n. 80.\**—*Rumph. mus. t. 47. Ostrea electrica.*—*Gualt. test. t. 99. f. 2.* Habitat in Java.

311. CHAMA. Animal Tethys. Testa bivalvis, grossior. Cardio callo gibbo, oblique inserto fossulæ obliquæ. Vulva clausa, absque nymphis.

1137. COR. 154. C. testa subrotunda lævi, natibus recurvatis, rima hiantē. *M. L. U. 516. n. 88.\**—*Bonan. recr. 2. t. 88.*—*Rumph. mus. t. 48. f. 10.*—*Gualt. test. t. 71. f. E.*—*Argenv. conch. t. 26. f. K.* *Corbovis.*—*Ginan. adriat. t. 2. t. 19. f. 129.*—*Seb. mus. 3. t. 86. f. 1.* Habitat in M. Adriatico versus Dalmatiam. Testa crassa, subrotunda, exalbido-lutescens. Nates evidentius quam in aliis, cornu arietis in modum oblique versus anum convolutæ. Rima nymphis nudis, hymene obtectis. Ani regio sub natibus retusa. Cardio callis compressissimis.

1137. GIGAS. 155. C. testa plicata fornicato-squamosa, ano hiantē crenato. *M. L. U. 512. n. 81.\**—*Olear. mus. t. 29. f. 6.*—*Bonan. recr. 2. f. 83, 84.*—*Rumph. mus. t. 42. f. A, B.* *Chama squamata.*—*Gualt. test. t. 92. f. A–G; t. 93. f. B.*—*Argenv. conch. t. 26. f. E.* *Imbricata.*—*Regenf. conch. t. 10. f. 48.* Habitat in M. Asiatico. Testæ pondere librarum 532 in M. L. U., adeoque omnium testaceorum maximæ. Variat rugis transversis confertissimis.

1137. HIPPOPUS. 156. C. testa plicata muricata, ano retuso clauso dentato. *M. L. U. 513. n. 82.\**—*Bonan. recr. 2. f. 81, 82.*—*Rumph. mus. t. 42. f. C.* *Chama aspera obtusa.*—*Gualt. test. t. 93. f. A.*—*Argenv. conch. t. 26. f. H.* *Folium brassicæ.*—*Regenf. conch. t. 10. f. 49.* Habitat in M. Asiatico.

1138. ANTIQUATA. 157. C. testa subcoarctata, sulcis longitudinalibus striisque transversis. *M. L. U. 514. n. 84.\**—*Gualt. test. t. 71. f. L.*—*Bonan. recr. 2. t. 98.*—*Kirch. 446. f. 96.*—*Adans. seneg. 1. t. 16. f. 2.* Habitat in O. Africano.

1138. TRAPEZIA. 158. C. testa trapezia gibba, sulcis longitudinalibus crenulatis. Habitat in Oceano Norvegico. *Zoega.\** Testa magnitudine pisi, gibbosa ut Arca Noë, fere trapezia, ferruginea. Nates parum recurvatæ, anus ovato-cordatus. Vulva oblonga, distincta, plana, extus crenata. Striæ totius 20, longitudinales, crenatæ, nodulis obtusis. Margo crenulatus.

1138. SEMIORBICULATA. 159. C. testa semiorbiculata compressa

rudi decussate striata. *M. L. U.* 514. *n.* 85.\* Habitat . . . Testa longitudinaliter striata, imbricata squamis annotinis. Lobus ani albidus margine postico crenato.

1138. CALYCVLATA. 160. C. testa oblonga, sulcis imbricatis, antice retusa. *Gualt. test. t.* 90. *f. F.*—*List. conch. t.* 347. *f.* 184, 185.—*Adans. seneg. l. t.* 15. *f.* 8. Habitat in M. Mediterraneo. Testa magnitudine extimi articuli digiti, alba, oblonga, sulcis longitudinalibus imbricatis, squamulis fornicatis. Nates obtuse gibbæ, auctæ testa juvenutis fusca. Rima minima. Venter antice compresso-gibbus; supra rotundatus. Dorsum compressum, retusum. Anus orbiculatus, minimus; pone anum angulus obtusiusculus valde prominulus exit.

1138. CORDATA. 161. C. testa cordata transversim striata, hinc elongata compressa. *M. L. U.* 515. *n.* 86.\* Habitat in . . . Testa testacea, inferne (non versus marginem exteriorem) sulcis transversis, distinctis, obtusis. Angulus inter rimam et marginem exteriorem elongatus obscurior.

1138. SATIATA. 162. C. testa subrotunda, sulcis dentatis punctis interstinctis, ano retuso. Habitat . . . Testa alba, extus rufescens: sulci elevati, longitudinaliter dentati alternis brevioribus. Margo crenulatus. Anus cordatus, retusus.

1139. OBLONGA. 163. C. testa oblonga antice angulata, dentibus anticis acutis. *M. L. U.* 515. *n.* 87.\* Habitat . . . Testa subtilissime decussatim striata, alba, intus lactea; antè angulo utrinque excurrente.

1139. LAZARUS. 164. C. testa imbricata lamellis laceris, nate oblique subspirali. *M. L. U.* 513. *n.* 83.\*—*Rumph. mus.* 48. *f.* 3.—*Argenv. conch. t.* 23. *f. F, I.* *Placenta foliacea.*—*Brown. jam. t.* 40. *f.* 9.—*Seb. mus.* 3. *t.* 89. *f.* 9, 11, 6, 5. Habitat in M. Mediterraneo, Americano.

1139. GRYPHOIDES. 165. C. testa orbiculata muricata: valvula altera planiore; altera nate productione subspirali. *Bonan. recr.* 2. *t.* 22.—*Gualt. test. t.* 101. *f. C-I.*—*Rond. test. l. c.* 25. *Concha rugata.*—*Gesn. aqu.* 316.—*Aldr. exs.* 458.—*List. conch. t.* 212. *f.* 47, et *t.* 213. *f.* 48, et *t.* 215. *f.* 50–53.—*Sloan. jam. t.* 241. *f.* 4–7.—*Adans. seneg. l. t.* 15. *f.* 1. *Jataronus.* Habitat in M. Mediterraneo Africam alluente. *Brander.* Valvulæ albæ, orbiculatæ, punctis muricatæ, altera adhærente alii corpori. Nates obsolete recurvatæ, in spiram contortæ, intus auriformes.

1139. BICORNIS. 166. C. testæ valvulis conicis: natibus corniformibus obliquis tubulosis valvula longioribus. *Column. purp. c.* 19.—*List. conch. t.* 214. *f.* 49.—*Klein. ostr.* 274. *t.* 12. *f.* 87, 88. Habitat in M. Mediterraneo. Singulæ valvulæ referunt Patellam cucullatam obliquam, hinc præcedenti multum affinis.

1139. ARCINELLA. 167. C. testa sulcata muricata excavato-punc-



tata, cardinis callo sessili. Habitat in O. Americano. *Sprengler*. Testa magnitudine pruni, longitudinaliter sulcatæ sulcis excavato-punctatis, poris imbricato-muricatis; margo crenulatus. Nates subæquales. Ani regio cordata, intrusa, papillosa, rugosa. Cardinis callus prominens, valde singularis sulcis 4 angustis, quas lamellæ totidem, in opposita cavitate, intrant.

312. ARCA. Animal Tethys? Testa bivalvis, æquivalvis. Cardo dentibus numerosis, acutis, alternis, insertis.

\* *Margine integerrimo; natibus recurvatis.*

1140. TORTUOSA. 168. A. testa parallelipipeda striata, valvula oblique carinata, natibus recurvis, margine integerrimo. *M. L. U.* 517. n. 86.\*—*Bonan. Kirck. 2. t. 122.*—*Rumph. mus. t. 47. f. K.* *Ostreum tortuosum.*—*Gualt. test. t. 95. f. B.*—*Klein. ostr. t. 8. f. 16.* Habitat in . . . Norvegia similis, sed minuta.

\*\* *Margine integro; natibus inflexis.*

1140. NOÆ. 169. A. testa oblonga striata apice emarginata, natibus incurvis remotissimis, margine integerrimo hiantes. *M. L. U.* 517. n. 90.\*—*Rond. aqu. 2. p. 27.* *Concha rhomboides.*—*List. conch. 3. B. s. 6. c. 1. t. 5.* *Musculus matthioli.*—*Bonan. recr. 2. t. 32.* *Concha rhomboides.*—*Rumph. mus. t. 44. f. P.* *Arca Noæ.*—*Gualt. test. t. 87. f. H, I, G.*—*Argenv. conch. t. 26. f. G.*—*Ginan. adr. 2. t. 23. f. 159.*—*Regenf. conch. t. 12. f. 73.* Habitat in M. Rubro, Mediterraneo, Indico.

1140. BARBATA. 170. A. testa oblonga striis barbata, natibus incurvis approximatis, margine integerrimo clauso. *Fn. suec.* 1147.—*M. L. U.* 518. n. 91.\*—*Mus. Tessin. 116. t. 6. f. 1.*—*Rond. test. 14.* *Chama aspera.*—*Bonan. recr. 2. t. 79.*—*Gualt. test. t. 91. f. F.*—*Argenv. conch. t. 25. f. M.*—*Ginan. adr. 2. t. 23. f. 160.*—*Seb. mus. 3. t. 88. f. 13.* Habitat in M. Mediterraneo. Testa apice rotundata, integra; striæ ex punctis callosis concatenatis: alternis striis majoribus. Barba striis versus apicem imprimis tenuiorem rigens.

1141. MODIOLUS. 171. A. testa oblonga striata antice angulata. Habitat in M. Mediterraneo. *J. Zoega*. Testa magnitudine fabæ majoris, extus flavescens, intus alba aut subviolacea, figura omnino Mytili Modioli. Valvulæ striatæ ad latus vulvæ s. antierius profundius; ad vulvæ superiora angulus compressus; posteriora natibus vix vel parum longiora. Nates recurvæ. Cardo elongatus, longitudinaliter crenatus s. denticulatus.

1141. PELLA. 172. A. testa ovata pellucida substriata; vulva prominente distincta, margine integerrimo, cardine ciliari. Habitat in M. Mediterraneo. *F. Logie*. Testa magnitudine seminis Helianthi annui, alba, pellucida, oblique striata, nitidissima. Vulva valde prominens,

transverse striata. Cardinis dentes subulati acutissimi (quod non in reliquis), imprimis sub vulva.

\*\*\* *Margine crenato; natibus recurvatis.*

1141. LACTEA. 173. A. testa subrhomboidea obsolete decussatim striata diaphana, natibus recurvis, margine crenulato. Habitat in M. Mediterraneo. *Brander, Logie.* Testa magnitudine fabæ equinæ.

1141. ANTIQUATA. 174. A. testa oblique cordata multisulcata sulcis muticis, natibus recurvis, margine crenato. *M. L. U.* 518. n. 91.\*—*Bonan. recr.* 2. t. 74.—*List. conch. t.* 236. f. 70.—*Rumph. mus. t.* 44. f. I.—*Sloan. jam. t.* 241. f. 14, 15, 16.—*Gualt. test. t.* 87. f. C.—*Adans. seneg. 1. t.* 18. f. 6. Habitat in O. Americano, Africano. Vulvæ regio quasi angulo compresso prominens.

1142. SENILIS. 175. A. testa oblique cordata octosulcata lævi, natibus recurvis, margine plicato. *M. L. U.* 518. n. 92.\*—*List. conch. 3. B. s. 2. c. 1. t.* 4.—*Gualt. test. t.* 87. f. D.—*Klein. ostr. t.* 10. f. 45.—*Adans. seneg. 1. t.* 18. f. 5. Habitat ad Jamaicam, inque O. Africano.

1142. GRANOSA. 176. A. testa subcordata sulcis muricatis, natibus recurvis, margine crenato. *M. L. U.* 519. n. 93.\*—*Column. purp.* 21. t. 20. f. 3.—*Bonan. recr.* 2. t. 73.—*Gualt. test. t.* 87. f. E.—*Argenv. conch. t.* 26. f. C. Habitat in O. Europæ meridionalis.

1142. DECUSSATA. 177. A. testa lenticulari decussatim substriata, natibus recurvis, margine crenato, rima clausa. *M. L. U.* 519. n. 94.\* Habitat in Indiis.

1142. PALLENS. 178. A. testa lenticulari subobliqua decussatim striata, natibus recurvis, margine crenato, rima angustissima. *M. L. U.* 520. n. 95.\* Habitat in Indiis. Testæ color pallidus. Rima lævis.

\*\*\*\* *Margine crenato; natibus inflexis.*

1142. UNDATA. 179. A. testa lenticulari inaurita læviuscula, natibus inflexis, margine plicato. *Bonan. recr.* 2. t. 61. Habitat ad Jamaicam. Testa picta uti A. Pectunculus, sed crassior, vix rugosa, minime sulcata, basi rotundata, margine plicata.

1142. PECTUNCULUS. 180. A. testa lenticulari subaurita sulcata sulcis subimbricatis, natibus inflexis, margine plicato. *M. L. U.* 520. n. 96.\*—*List. conch. 3. B. s. 2. c. 2. t. 1. f.* 1, 2.—*Gualt. test. t.* 72. f. II.—*Argenv. conch. t.* 27. f. B? Habitat in O. Americano.

1143. GLYCYMERIS. 181. A. testa suborbiculata gibba substriata, natibus incurvis, margine crenato. *M. L. U.* 521. n. 97.\*—*Bell. aquat.* 408.—*Rond. test.* 31.—*Bonan. recr.* 2. t. 60, 61.—*Rumph. mus. t.* 47. f. 1.—*List. conch. 3. B. s. 2. c. 3. t.* 2. *Chama glycymeris.*—*Gualt. test. t.* 82. f. C, D.—*Adans. seneg. 1. t.* 18. f. 10. Habitat ad insulam Garnsey; inque O. Africano.

1143. PILOSA. 182. A. testa suborbiculata æquilatera pilosa, natibus incurvis, margine crenato. *Bonan. recr. 2. t. 80. Nux pilosa.*—*Gualt. test. t. 73. f. A. Ponderosa serico indumento.* Habitat in M. Mediterraneo. C. *Alstroemer.* Simillima C. Glycymeri, sed testa perfecte regularis, et extus toto limbo holoserici veluti instar pilosa; intus alba; A. Glycymeris vero parum irregularis est.

1143. NUMMARIA. 183. A. testa subrotunda lævi subaurita transversim striata, natibus incurvis, margine crenulato. Habitat in M. Mediterraneo. Testa magnitudine unguis, undato-rufa, non perfecte lenticularis, vix manifeste transversim striata, auribus vix manifestis.

1143. NUCLEUS. 184. A. testa oblique ovata læviuscula, natibus incurvis, margine crenulato, cardine arcuato. Habitat in Europa. Testa magnitudine avellanæ. Inter nates rima triangularis, erecta.

313. OSTREA. Animal Tethys. Testa bivalvis, inæquivalvis, subaurita. Cardio edentulus fossula cava ovata, striisque lateralibus transversis. Vulva annsve nullus.

\* *Pectines auriculati, æquilateres.*

1144. MAXIMA. 185. O. testa inæquivalvi radiis rotundatis longitudinaliter striatis. *Fn. suec. 2148.*—*M. L. U. 522. n. 98.\*—List. conch. t. 161. f. 1; angl. t. 5. f. 29. Pecten maximus.*—*Gualt. test. t. 98. f. A, B.* Habitat in Oceano Europæo.

1144. JACOBÆA. 186. O. testa inæquivalvi radiis 14 angulatis longitudinaliter striatis. *M. L. U. 522. n. 99.\*—Gualt. test. t. 99. f. B.—Regenf. conch. 6. t. 2. f. 19.—Bonan. recr. 2. t. 3, 4.—Ginan. adr. 2. t. 16. f. 123.* Habitat in M. Mediterraneo.

1144. ZICZAC. 187. O. testa inæquivalvi radiis 18 explanatis. *M. L. U. 523. n. 100.\** Habitat in O. Australiori. Testa valvula plana radiis obsoletis, sed intus versus marginem plicis duplo pluribus conspicuis.

1144. STRIATULA. 188. O. testa inæquivalvi radiis 16 oblitteratis transverse membranaceo-striatis, margine integerrimo. *M. L. U. 523. n. 101.\** Habitat in O. Indico. Valvula convexior paulo magis gibba, quam planior; color intus flavescens radiorum interstitiis albis.

1144. MINUTA. 189. O. testa inæquivalvi radiis 20 convexis. *M. L. U. 524. n. 102.\** Habitat in O. Indico. Testa gibbosior, admodum convexa, parvula. T. planior profunde plicata plano-convexa.

1145. PLEURONECTES. 190. O. testa æquivalvi radiis 12 duplicatis, extus lævi. *M. L. U. 524. n. 103.\*—Rumph. mus. t. 45. f. A, B.*

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OSTREE tantum non omnes, imprimis Pectines, ad cardinem interne sulcis transversis numerosis parallelis in utraque testa oppositis gaudent, quæ probe distinguendæ ab Arcis polyleptoginglymis, quarum dentes numerosi alternatim inurant alterius sinus.

*Amusium*.—*Gualt. test. t. 73. f. B.*—*Argenv. conch. t. 27. f. G.* *Umbella s. Solea*.—*Klein. ostr. t. 9. f. 30.* Habitat in Indiis.

1145. RADULA. 191. O. testa subæquivalvi radiis 12 convexis: striis decussatis crenatis, auriculis æqualibus. *M. L. U. 525. n. 105.\**—*Rumph. mus. t. 44. f. A, B.* *Radula*. Habitat in O. Indico.

1145. PLICA. 192. O. testa subæquivalvi radiis 6 convexis læviusculis, decussato-striata. *M. L. U. 526. n. 106.\**—*Rumph. mus. t. 44. f. O.* *Pallium maculatum*.—*Argenv. conch. t. 27. f. C.* Habitat in O. Indico.

\*\* *Pectines auricula altera intus ciliato-spinosa.*

1145. PALLIUM. 193. O. testa æquivalvi radiis 12 convexis, striata scabra squamis imbricata. *M. L. U. 526. n. 107.\**—*Rumph. mus. t. 44. f. B, C.* *Pecten secundus*.—*Gualt. test. t. 74. f. F.*—*Argenv. conch. t. 27. f. I.* *Pallium ducale*.—*Regenf. conch. 26. t. 6. f. 59.* Habitat in O. Australiori et Indico.

1145. NODOSA. 194. O. testa inæquivalvi radiis 9 nodoso-vesicularibus. *M. L. U. 527. n. 108.\**—*Rond. test. 25.* *Concha corallina*.—*Bonan. recr. 2. f. 18.*—*Rumph. mus. t. 48. f. 8.*—*Gualt. test. t. 99. f. C, D.*—*Argenv. conch. t. 27. f. F.* *Pecten corallinus*. Habitat in O. Africano et Indico.

1146. PES-FELIS. 195. O. testa inæquivalvi radiis 9 striatis scabris, auricula altera minuta. *M. L. U. 527. n. 109.\** Habitat in O. Africano. Testa parva, pellucida, novem radiis sensim undata.

1146. PELLUCENS. 196. O. testa subæquivalvi radiis 9, lævi: fornice squamis cochleari-hemisphæricis. *Mus. L. U. 528. n. 110.\**—*Argenv. conch. t. 27. f. H.* *Pecten semiauritus*.—Habitat in O. Australiori.

1146. OBLITERATA. 197. O. testa radiis 24 duplicatis, extus lævi. *M. L. U. 525. n. 104.\**—*Gualt. test. t. 73. f. C.* Habitat in Europa australiori.

1146. SANGUINEA. 198. O. testa æquivalvi radiis 22 scabris, semiaurita. *M. L. U. 528. n. 111.\**—*Gualt. test. t. 74. f. N.* Habitat in O. Australiori.

1146. VARIA. 199. O. testa æquivalvi radiis 30 scabris compressis echinatis, uniaurita. *M. L. U. 529. n. 112.\**—*Gualt. test. t. 74. f. R.* Habitat in O. Australiori. Simillima priori, sed numero radiorum differens. Color maxime variat.

1146. PUSIO. 200. O. testa æquivalvi radiis 40 filiformibus, uniaurita. *M. L. U. 529. n. 113.\** Habitat in O. Australiori. Testa magnitudine nucis coryli, utrinque æqualiter convexa. Auricula fere unica.

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PECTINES exsiliunt ex aquis; plerique auriculati et inæquivalves sunt, non vero omnes; radiati tamen plurimi sunt.

1146. GLABRA. 201. O. testa æquivalvi radiis 10 lævibus planiusculis, internis striis elevatis duplicatis. *M. L. U.* 530. *n.* 114.\*—*Gualt. test. t.* 73. *f.* H.—*Regenf. conch. t.* 1. *f.* 10, et *t.* 2. *f.* 16. Habitat in M. Mediterraneo. Testa subrotunda, glabra, absque striis extus, obsolete plicata, incarnata. Auriculæ æquales.

1147. OPERCULARIS. 202. O. testa inæquivalvi radiis 20, subrotunda decussatim striato-scabra, operculo convexiore. *Mus. L. U.* 530. *n.* 115.\* Habitat in O. Meridionali. Testa opercularis magis quam altera convexa.

1147. GIBBA. 203. O. testa æquivalvi radiis 20 glabris, gibba. *Mus. L. U.* 531. *n.* 116.\*—*Brown. jam. t.* 40. *f.* 10. Habitat in M. Americano. Valvula utraque convexa et sanguinea.

\*\*\* *Pectines valvulis altero latere magis gibbis.*

1147. FLAVICANS. 204. O. testa subæquivalvi gibba radiis 8 striatis, margine altero rotundato. *M. L. U.* 531. *n.* 117.\* Habitat in O. Australiori. Testa quasi obliqua. Auricula altera brevissima; color albus fusco rubroque varius; intus albus radiis flavis.

1147. FASCIATA. 205. O. testa æquivalvi gibba radiis 20 scabris: interstitiis striatis, auriculis æqualibus exoletis. *M. L. U.* 532. *n.* 118.\*—*Gualt. test. t.* 74. *f.* E. Habitat in O. Australiori.

1147. LIMA. 206. O. testa æquivalvi gibba radiis 22 imbricatis squamis, altero margine rotundato, auriculis oblitteratis. *M. L. U.* 532. *n.* 119.\*—*Bonan. recr. 2. t.* 71.—*Rumph. mus. t.* 44. *f.* D.—*Gualt. test. t.* 88. *f.* F.—*Argenv. conch. t.* 27. *f.* E. *Lima.*—*Klein. ostr. t.* 9. *f.* 34. Habitat in O. Meridionali. Testa alba oblonga æquivalvis. Auriculæ obsoletæ. Nates hiantes; acutangulæ.

\*\*\*\* *Rudes, vulgo Ostrea dictæ.*

1147. MALLEUS. 207. O. testa æquivalvi triloba: lobis transversis. *M. L. U.* 533. *n.* 121.\*—*Bonan. kirch. 2. f.* 130.—*Rumph. mus. t.* 47. *f.* H. *Ostreum divisum.*—*Gualt. test. t.* 96. *f.* D, E.—*Argenv. conch. t.* 22. *f.* A. *Malleus brachiatus.*—*List. conch. 3. B. s.* 1. *t.* 1. *f.* 1.—*Klein. ostr. t.* 8. *f.* 14.—*Seb. mus. 3. t.* 91. *f.* 4, 5, et *t.* 93. *f.* 1, 2. Habitat in O. Asiatico, pretiosa. Testa rudis, nigra, oblonga, linearis, hinc flexuosa. Lobi laterales transversii; subulati. Cardo hians lacuna, in cuius medio fossula transversa. Cavitas admodum parva.

1148. DILUVIANA. 208. O. testa inæquivalvi extus plicata, margine dentibus erectis acutangulis. Habitat . . . fossilis in nostris montibus calcareis. Testa magnitudine O. edulis et ultra. Margo intransversus erectus ad angulum rectum cum testa. Dentes hi perfecte acutanguli, quasi serra exsecti, extusque videntur constare lamellis imbricatis; margo dentium planus, sæpe transversim striatus. Cardinem distincte non vidi. Valvulæ pectinatim plicatæ rugis acutis.

1148. FOLIUM. 209. O. testa inæquivalvi ovata lateribus obtuse

plicata parasitica. *M. L. U.* 534. n. 122.\*—*Rumph. mus. t.* 47. f. *A.* *Ostreum cratium*.—*Regenf. conch. t.* 22. f. *F.*—*Klein. ostr. t.* 8. f. 22. Habitat ad Jamaicam. Valvula altera medio longitudinali adhæret Gorgoniis. Cardo lacuna est, unde diversa a *Mytilis parasiticis*.

1148. ORBICULARIS. 210. O. testa orbiculata plana, margine integro crenato. *Gualt. test. t.* 104. f. *G.* Habitat . . . Testa magnitudine extimi articuli pollicis, compresso-plana, margine obtusissimo crenato.

1148. EDULIS. 211. O. testa inæquivalvi semiorbiculata membranis imbricatis undulatis, valvula altera plana integerrima. *Fn. suec.* 2149. —*M. L. U.* 534. n. 123.\*—*Rond. aqu. 2. p.* 37.—*Gualt. test. t.* 102. f. *B.* *Ostreum vulgare*.—*Gesn. aqu. 2. p.* 37. *Ostrea*.—*Aldr. exsang.* 482. *Ostrea rondeletii marina*.—*List. angl.* 176. t. 4. f. 26. *Ostreum vulgare maximum*.—*List. hist.* 193. 20. *Ostrea major sulcata, inæqualiter utrinque ad cardinem denticulata*.—*Klein. ostr. t.* 8. f. 21.—*Bonan. recr.* 108. t. 70. *Ostrea*.—*Ginan. adr. 2. t.* 18. f. 127.—*Baster. subs.* 2. p. 62. t. 8. Habitat in Oceano Europæo. Frequentes in cœnis Asotorum, vivæ epulæ. Ostrea recens natæ celerrime natandi facultate gaudent undulato branchiarum, tunc parum e testis exsertarum, motu, quod sæpius vidit Cel. Baster. subs. v. 2. lib. 3. p. 146; idem de alia Concha Ledermullerus.

1149. SEMIAURITA. 212. O. testa ovata semiaurita lævi, basi obliqua. *M. L. U.* 535. n. 124.\*—*Gualt. test. t.* 84. f. *H.* Habitat in O. Meridionali.

1149. PERNA. 213. O. testa æquivalvi obovata inæquali: hinc rotundiore cardine multoties sulcato. Habitat in Indiis. Testa facie Pernæ, subdiaphana, colore ligni putridi s. ferruginea.

1149. ISOGONUM. 214. O. testa æquivalvi lobo laterali majore, cardine multoties sulcato. *M. L. U.* 533. n. 120.\*—*Rumph. mus. t.* 47. f. 1.—*Gualt. test. t.* 97. f. *A.*—*Seb. mus. 3.* 91. f. 6, 7, 8.—*Klein. ostr. t.* 8. f. 15. Habitat in Indiis. Cardine cum sequenti convenit.

1149. EPHIPPIUM. 215. O. testa æquivalvi orbiculata compresso-membranacea, cardine sulcis transversis pluribus. *M. L. U.* 535. n. 125.\*—*Rumph. mus.* 47. f. *B.* Habitat in M. Asiatico. Testa compressa ut vix cavitas appareat, extus rudis fusca, distinctissima ab *Anomia Ephippio* et *Placenta*.

314. ANOMIA. Animal: corpus ligula emarginata ciliata, ciliis valvulæ superiori affixis. Brachiis 2, linearibus, corpore longioribus, conniventibus, porrectis, valvulæ alternis, utrinque ciliatis, ciliis affixis valvulis utrisque. Testa inæquivalvis: valvula altera planiuscula, altera basi magis gibba; harum altera sæpe basi perforata. Cardo edentulus, cicatricula lineari prominente introrsum dente laterali;

valvulae vero planioris in ipso margine. Radii duo ossei pro basi animalis.

1150. CRANIOLARIS. 216. A. testa orbiculata: valvula gibbosiore conico-convexa, planiore basi foraminibus tribus. *Faun. suec.* 2150. f. 2150.\*—*Stobæi Diss. epist. Lund.* 1732. f. 1, 2. *Nummulus bratzensburgensis.*—*Act. Upsal.* 2. p. 560. t. 152. f. a. idem.—*Brackm. cent. 2. epist.* 38. p. 390. t. 17. f. 10. *Marlekard.* Habitat in Scania ad Iivo et Balsbergam, nondum viva reperta.

1150. PECTINATA. 217. A. testa oblonga ramoso-sulcata: gibbosiore postice poris duobus. Habitat . . . fossilis.

1150. EPHIPPIMUM. 218. A. testa suborbiculata rugoso-plicata: planiore perforata. *Bonan. recr.* 2. t. 56.—*Argenv. conch. t.* 22. f. C.—*Ginan. adr.* 2. t. 27. f. 172. Habitat in M. Mediterraneo et Americano. Testa alba, magnitudine volæ, intus argentea nitidissima; utraque valvula sæpe plicis quinque longitudinalibus, nec ad cardinem concurrentibus. Planior testa magno foramine.

1151. CEPA. 219. A. testa obovata inæquali violacea: superiore convexa, inferiore perforata. Habitat in M. Mediterraneo. Magnitudo Nucis Juglandis, sed altera testa plana.

1151. ELECTRICA. 220. A. testa subrotunda flava lævi: altera convexo-gibbosa. *Rumph. mus. t.* 47. f. L. *Ostreum electricum?* Habitat in M. Mediterraneo.

1151. SQUAMULA. 221. A. testa orbiculata integerrima plana margine altero gibba lævi. *Fn. suec.* 2151.—*It. Wgot.* 171. *Patella.* Habitat in Oceano Suecico super Cancros, Fucos.

1151. PATELLIFORMIS. 222. A. testa ovata convexa subdiaphana striata, vertice postico recurvo lævi. *Fn. suec.* 2152.\* Habitat in Oceano Norvegico.

1151. SCOBINATA. 223. A. testa subrotunda lævi, intus scabra, nate perforata. *Gualt. test. t.* 96. f. A. Habitat in Pelago.

1151. AURITA. 224. A. testa obovata striata subaurita, nate perforata. *Gualt. test. t.* 96. f. B. Habitat . . .

1151. RETUSA. 225. A. testa obovata striata retusa: convalle longitudinali, nate perforata. *Fn. suec.* 2153. Habitat in Pelago Norvegico supra Alcyonia. *D. Pennant.*

1151. GRYPHUS. 226. A. testa oblonga lævi: altera plica laterali obsoleta: nate incurvata: altera brevi planiuscula. *Mus. Tessin.* 92. t. 5. f. 9.—*Olear. mus.* 67. t. 33. f. 3.—*Rumph. mus. t.* 59. f. D.—*List. angl.* 238. t. 8. f. 45.—*Column. aqu.* 54. t. 52.—*Bonan. recr.* 2. t. 31. Habitat . . . fossilis.

1152. PECTEN. 227. A. testa semiorbiculata depressa multistriata: valvula altera plana. *List. angl.* 243. t. 9. f. 49. Habitat . . . fossilis. Testa inferne s. margine cardinis linea recta s. transversa.

1152. STRIATULA. 228. A. testa subrotundo-dilatata utrinque gibba striata, valvis æqualibus. Habitat . . . fossilis. Testa rotundata, sed duplo latior quam longa, postice gibbosior, antice margine tenuis.

1152. TRUNCATA. 229. A. testa suborbiculata obsolete striata, cardine truncato. *List. angl.* 243. t. 9. f. 50. Habitat in Pelago Norvegico supra corallia. Testa proxima A. striatulæ, suborbiculata, sed cardine recto, exciso; subtilissime longitudinaliter striata, compressa, testa altera medio nonnihil gibba, basi foramine tendinem exserente instructa, quod foramen in ipso cardine mutilatum seu non undique cinctum testa, verum ad cardinem hians. Margo testæ tenuis, interne acutissime denticulatus. Animalculum brachiis lunatis et fere annulatis, depressis, ciliatis.

1152. RETICULARIS. 230. A. testa cordata decussatim striata: valvula brevior gibbosior. *Mus. Tessin.* 88. t. 5. f. 5. Habitat . . . fossilis. Testæ latera prominula compressa. Natis planioris valvulæ parum prominet.

1152. PLICATELLA. 231. A. testa dilatato-lunata plicata: sulcis longitudinaliter striatis media latiore. Habitat . . . fossilis. Testæ latera submucronata sunt; plicæ longitudinales, striæ vero, in plicarum cavitatibus, plicis parallelis s. longitudinalibus. Natum superior admodum prominens.

1152. CRISPA. 232. A. testa dilatato-triangulari plicata sulcis rugosis: media latiore. *Mus. Tessin. p.* . . t. 5. f. 7.—*List. angl.* t. 9. f. 56. Habitat . . . fossilis. Testa fere lunata, sed natum superior prominens. Sulci 5 s. 6 rugis arcuatis transversis. Latera testæ submucronata.

1153. LACUNOSA. 233. A. testa subrotunda multisulcata: valvulis apice plicatis; altera brevior lacunosa, apice quadridentata. *Mus. Tessin.* . . t. 5. f. 6.—*List. angl.* 249. t. 9. f. 57.—*Grew. mus.* t. 19. f. 6. Habitat . . . fossilis.

1153. PUBESCENS. 234. A. testa obovata sulcata: valvula altera nate ad cardinem dehiscente apertura. Habitat in Zoophytis O. Norvegici. *J. Zoega.* Parva, magnitudine vix seminis Cucumeris, alba. Testæ æquales obovatæ, cardinis instar longitudinaliter sulcatæ absque plicaturis, absque retusione; omnes lente visæ quasi pilis brevissimis erectis distantibus hirtæ. Valvula alterius natis postice prominens facit foramen versus valvulam alteram, nec perforata est foramine undique ab eadem testa cincto.

1153. FARCTA. 235. A. testa subrotunda multisulcata, valvulis convexis apice octodentatis. Habitat . . . fossilis.

1153. CAPUT-SERPENTIS. 236. A. testa obovata striata tomentosa: valvula altera nate longiore perforata. *Fn. suec.* 2154.—*Column. purp.* 22. f. 2.—*Gualt. test.* t. 96. f. D. Habitat in abyssu M. Norvegici. Testa obovata, tomentosa, antice compressa, longitudinaliter striata,



alba. Valvula superior postice prominens longiorque apice perforato ligamento affixo coralliiis Zoophytisve; hæc antice paulo longior et declinata. Inferior valvula rotundata, antice retusa, postice brevior. Margo utriusque crenulatus. Cardo dente utriusque testæ utrinque ad latus prominens.

1153. TEREBRATULA. 237. A. testa obovata lævi convexa: valvula altera triplicata, altera biplicata. *Fn. suec.* 2155.—*Column. purp.* 22. f. 1.—*List. angl.* 240. t. 8. f. 46.—*Klein. ostr.* t. 11. f. 74. Habitat in M. Norvegico. Natis alterius testæ prominens pertusa est; extus plicæ duæ.

1154. ANGULATA. 238. A. testa basi laterum compressa, antice plicata: medio tridentato. *Mus. Tess.* 96. t. 5. f. 4. Habitat . . . fossilis. Testa lævis, sed antice plicata; numerus plicarum variat; dignoscitur quod latera versus basin multum compressa.

1154. HYSTERITA. 239. A. testa dilatata lævi convexa striata subtriloba, antice depressa, margine acuto. *Mus. Tess.* 90. t. 5. f. 1, 2, 3.—*Column. purp.* 22. f. 3? *Trilobos.*—*Wolff. hass.* 29. t. 3. f. 3, 4, 5.—*Worm. mus.* t. 83. Habitat . . . fossilis.

1154. BILOBA. 240. A. testa biloba æquali striata. Habitat . . . a *D. Pennant.* Fossilis.

1154. PLACENTA. 241. A. testa orbiculata plana pellucida, cardinum callis linearibus binis testæ interne adnatis. *M. L. U.* 536. n. 126.\*—*List. conch.* 3. B. s. . 2. c. 2. t. 1.—*Gualt. test.* t. 104. f. B.—*Seb. mus.* 3. t. 90. f. *pleræque.* Habitat in Pelago. Cardo rufescens. Valvulæ æquales integræ.

1154. SPINOSA. 242. A. testa spinis longitudine testæ. *D. Solander.*† Habitat fossilis in Anglia.

315. MYTILUS. Animal Ascidia? Testa bivalvis, rudis, sæpius affixa bysso. Cardo edentulus, distinctus linea subulata excavata longitudinali.

\* *Parasilici, unguibus affixi.*

1155. CRISTA-GALLI. 243. M. testa plicata spinosa, labro utroque scabro. *M. L. U.* 537. n. 128.—*Rumph. mus.* t. 47. f. D. *Ostreum plicatum minus.*—*Gualt. test.* t. 104. f. C, D, E.—*Argenv. conch.* t. 23. f. D. *Auris porci s. Crista galli.*—*Sloan. jam.* 1. t. 18. f. 1. Habitat in O. Indici Gorgoniis. Labra interiora marginum testarum punctis eminentibus scabra.

1155. HYOTIS. 244. M. testa plicata imbricata squamis compressis patulis, labro utroque lævi. *M. L. U.* 548. n. 129.\*—*Rumph. mus.* t. 47. f. C. *Ostreum plicatum majus.*—*Argenv. conch.* t. 23. f. H. *Ostreum sylvestre.* Habitat in Pelagi Gorgoniis.

1155. FRONS. 245. M. testa plicata læviuscula, labro altero scabro.

*M. L. U.* 537. *n.* 127.\*—*Argenv. conch. t.* 22. *f. D.* *Cratium s. folium.* Habitat in Pelagi Indici Gorgoniis. Cardio absque lacuna, unde diversus ab Ostrea folio.

\*\* *Plani s. compressi, ut plani appareant et subauriti.*

1155. MARGARITIFERUS. 246. *M.* testa compresso-plana suborbiculata, basi transversa, imbricata tunicis dentatis. *M. L. U.* 538. *n.* 130.\*—*Bonan. recr. 2. t.* 1.—*Imperat. nat.* 905. *Concha margaritifera.*—*List. conch. t.* 223. *f.* 57.—*Rumph. mus. t.* 47. *f. F.* *Matrix perlarum.*—*Gualt. test. t.* 84. *f. E, F, G.*—*Argenv. conch. t.* 23. *f. A.* *Gallina guttata.* Habitat in utriusque Indiæ Oceano. Altera testa (in minoribus) aurita est altero latere, uti Pecten. Cardio rectissimus longitudine totius testæ. Lamellæ testæ, quibus est imbricata, valde dentatæ sunt.

1156. UNGUIS. 247. *M.* testa subrotunda longitudinaliter striata pellucida subaurita. *M. L. U.* 539. *n.* 131.\* Habitat in *M. Mediterraneo.* Magnitudo unguis humani.

\*\*\* *Ventricosiusculi.*

1156. LITHOPHAGUS. 248. *M.* testa cylindrica utrinque extremitatibus rotundatis. *M. L. U.* 539. *n.* 132.\*—*Rond. aqu. 2. p.* 49. *Pholas.*—*List. angl. 235. t.* 8. *f.* 37.—*Bonan. recr. 2. t.* 28.—*Rumph. mus. t.* 46. *f. F.* *Pholas.*—*Gualt. test. t.* 90. *f. D.*—*Argenv. conch. t.* 30. *f. L.* *Dactylus.* Habitat in *O. Indico, Europæo, Mediterraneo,* penetrans et exedens marmora, corallia, etc. Testa Indica mollior et fere coriacea; Europæa vero magis fragilis.

1156. RUGOSUS. 249. *M.* testa rhomboideo-ovali rugosa obtusa antiquata. *Gualt. test. 7. f. D.*—*List. angl. t.* 4. *f.* 21? Habitat in Norvegiæ lacustribus: ostiis maris. Animal Ascidia. Testa vix minimi digiti, ultimi articuli, magnitudine, ovalis, sed utraque extremitate obtusissima, colore tristi, sulcis parallelis margine undique tecta. Cardio absque dente, sed margine ejus gibbosiore.

1156. BILOCULARIS. 250. *M.* testa cærulea striata, umbonibus fornicatis dissepimento albo. *M. L. U.* 540. *n.* 133.\* Habitat in *O. Indico.*

1156. EXUSTUS. 251. *M.* testa striata ventre angulato, margine crenato. *M. L. U.* 540. *n.* 134.\* Habitat ad Jamaicam.

1156. BARBATUS. 252. *M.* testa læviuscula ferruginea, extus apice barbata. *Fn. suec.* 2157.—*Ginan. adr. 2. p.* 36. *t.* 27. *f.* 169. *Musculus obscurus pilosus.*—*Gualt. test. t.* 91. *f. H.* *Figura mediæ.* Habitat in *M. Mediterraneo, Norvegico.*

1157. EDULIS. 253. *M.* testa læviuscula violacea, valvulis antice subcarinatis, postice retusis, natibus acuminatis. *Fn. suec.* 2156.—*M. L. U.* 541. *n.* 135.\*—*It. cel.* 43.—*It. vegoth.* 170.—*List. angl.* 182. *f.* 28; *conch. t.* 3. *t.* 362. *f.* 20.—*Bonan. recr. 2. t.* 30.—*Gualt. test.*

*t. 91. f. E.*—*Aldr. exsangu.* 512.—*Rond. aquat.* 2. *p.* 46.—*Gesn. aquat.* 277. *Mytulus.*—*Bell. aquat.* 397. *Mytulus.*—*Ginan. adr.* 2. *p.* 36. *t. 23. f.* 168.—*Act. paris.* 1711. *t. 3. f.* 4, 5.—*Baster. subs.* 3. *p.* 101. *t. 11. f.* 9—11. Habitat in O. Europæo, Indico, et M. Balthico, setis scopulis annexus. Plebeiis sapit; frequentius devoratus nocet; inter tropicos maximus, intra arcticum minimus, uti reliqua testacea. Habet more pinnæ byssum exserendam. Interdum venenatus, cepis coquendus. Heyde *Ant. Anatome Mytulorum* 1683. oct.

1157. UNGULATUS. 254. M. testa lævi subcurvata margine posteriore inflexo, cardine terminali bidentato. *M. L. U.* 541. *n.* 136.\*—*List. conch. t.* 360.—*Gualt. test. t. 91. f. E. duplex.*—*Regenf. conch.* 16. *t. 4. f.* 47. Habitat in Europa Australi; ad Cap. b. Spei. Vulvæ valde convexæ et juxta se positæ ungulas pecorum referunt. Nates distantes, acutæ. Cardio apicis dentibus 2, 3 s. 4 notatus. Color viridis aut cærulescens.

1157. BIDENS. 255. M. testa striata subcurvata margine posteriore inflexo, cardine terminali bidentato. Habitat in M. Mediterraneo. *Zoega.* Simillima tota structura Mytilo ungulato, sed striata longitudinaliter. Color cornu cinereus. Magnitudo pollicis transversi.

1158. MODIOLUS. 256. M. testa lævi, margine anteriore carinato, natibus gibbis, cardine sublaterali. *M. L. U.* 542. *n.* 137.\*—*Rumph. mus. t.* 46. *f. B.*—*Argenv. conch. t.* 25. *f. C. Musculus Papuanus.*—*Bradl. natur. t.* 3. *f. 1.*—*List. conch. t.* 256. *f.* 195, et *t.* 359. *f.* 198. —*Pet. gaz. t.* 71. *f.* 11.—*Gualt. test. t. 91. f. H. exterior.*—*Klein. ostr. t.* 11. *f.* 67.—*Adans. seneg. 1. t.* 15. *f.* 1.—Habitat in M. Mediterraneo, Norvegico edulis. Testa sæpe semipedalis, subviolacea cortice nigro; umbones tumidi, oblongi. Nates posteriora versus prominentes. Vulvæ regio recurvato-striata. Pars postica paulo ultra nates protuberat. Cardio cartilagineus ante nates, post vero nullus. Variat colore cinereo, luteo, nigro.

1158. CYGNEUS. 257. M. testa ovata antice compressiuscula fragilissima, cardine laterali. *List. angl. app. 29. t. 1. f.* 3. *Musculus latus maximus.*—*List. conch. t.* 193. *f.* 8.—*Gualt. test. t. 7. f. F.*—*Klein. ostr. t.* 9. *f.* 26. Habitat in Europa, ad ostia fluviorum.

1158. ANATINUS. 258. M. testa ovali compressiuscula fragilissima margine membranaceo, natibus decorticatis. *Fn. suec.* 2158.—*List. angl. app. 30. t. 1. f.* 2; *conch. t.* 154. *f.* 9.—*Gualt. test. t. 7. f. E.* Habitat in Europæ aquis dulcibus. Similis Myæ pictorum, sed fragilior et cardine distinctissimus, anatum cibus.

1158. VIRIDIS. 259. M. testa lævi ovata membranacea pellucida, cardine terminali. *M. L. U.* 542. *n.* 138.\* Habitat in O. Meridionali.

1158. RUBER. 260. M. testa rugosa, valvulis obliquis antice dilatatis, margine cardinali apicem æquante. *M. L. U.* 543. *n.* 139.\*—*Argenv. conch. t.* 25. *f. Q?* Habitat in O. Australiori.

1159. DISCORS. 261. M. testa ovali cornea subdiaphana antice

longitudinaliter postice transversaliter striata. Habitat in Norvegia, Islandia. *J. Zoega, Koenig*. Testa magnitudine Fabæ, cornea subdiaphana, fusca, marginibus virescentibus. Nates reflexæ. Testa tribus areis distinguitur: area antica striis constat a natibus ad marginem anteriorem anticum, longitudinalibus; tertia a natibus ad marginem anteriorem posticum, fere transversalibus; intermedia vel striis obsoletis transversalibus vel plane nullis.

1159. HIRUNDO. 262. *M.* testa lævi, valvulis bilobis, lobo cardinali longiore tenuioreque. *M. L. U.* 543. *n.* 140.\*—*List. conch.* 3. *B. f.* 1. *t.* 1. *f.* 2.—*Bonan. recr.* 2. *t.* 58.—*Rumph. mus. t.* 46. *f.* *G. Avicula*.—*Gualt. test. t.* 94. *f.* *A, B*.—*Argenv. conch. t.* 22. *f.* *B. Avicula s. Hirundo*.—*Klein. ostr. t.* 8. *f.* 13. Habitat in O. Meridionali, Mediterraneo. Testa basi contracta, alterius valvulæ magis.

316. PINNA. Animal Limax. Testa subbivalvis, fragilis; erecta omittens barbam byssinam. Cardo edentulus, coalitis in unam valvulis.

1159. RUDIS. 263. *P.* testa sulcata: squamis fornicatis per series digestis. *M. L. U.* 544. *n.* 141.\*—*Rumph. mus. t.* 46. *f.* *L. Pinna lata*.—*Argenv. conch. t.* 25. *f.* *F. Perna*.—*Ginan. adr.* 2. *t.* 25. *f.* 166. Habitat in O. Meridionali, Mediterraneo, Asiatico. Testa rudior cornei coloris, longitudinaliter grosse sulcata s. rugosa 5 ad 8 sulcis; nec alba, tenuissimis numerosissimisque striis *P. nobilis*.— $\beta$ . Testa rudis, facie pernae suillæ, nigra extus et intus, sæpe non sulcata ad summos margines, ubi adultior, adpersa squamis raris fornicatis.

1160. PECTINATA. 264. *P.* testa dimidia longitudinaliter striata, latere altero transverse subrugoso. *Gualt. test. t.* 79. *f.* *A*. Habitat in India.

1160. NOBILIS. 265. *P.* testa striata: squamis canaliculato-tubulosis subimbricatis. *M. L. U.* 544. *n.* 142.\*—*Bonan. recr.* 2. *f.* 24.—*Argenv. conch. t.* 25. *f.* *B*. Habitat in M. Mediterraneo. Varietates potius quam distinctæ species sunt sex priores hujus generis.

1160. MURICATA. 266. *P.* testa striata: squamis concavis ovatis acutis. *M. L. U.* 545. *n.* 143.\*—*List. conch. t.* 370. *f.* 215. *Pinna tenuis striata muricata*.—*Rumph. mus. t.* 46. *f.* *M. Pinna lata altera*.—*Gualt. test. t.* 79. *f.* *D*.—*Hasselq. itin.* 447. *n.* 137. *Concha Pinna*. Habitat in M. Mediterraneo. Hostis Sepia octopodia, custos Cancer Pinnotheres: *Amœn. acad.* 2. *p.* 48. *Hasselq. itin.* 449, 572.

1160. ROTUNDATA. 267. *P.* testa, squamis obsoletis, margine rotundata. *M. L. U.* 545. *n.* 144.\*—*Gualt. test. t.* 79. *f.* *C*. Habitat in O. Meridionali.

1160. SACCATA. 268. *P.* testa lævi saccata erectiuscula subfasti-

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PINNÆ neque vita fortasse posset servari a Polypo octopodia, nisi opera Cancri Pinnotheris. *Amœn. acad.* 2. *p.* 48.

giata. *M. L. U.* 546. n. 145.\*—*Rumph. mus. t.* 46. f. N. *Pinna alba*.—*Gualt. test. t.* 79. f. F. Habitat in M. Mediterraneo, Indico.

1160. DIGITIFORMIS. 269. P. testa lævi tubulosa digitiformi incurva, margine summo membranacea. *M. L. U.* 546. n. 146.\* Habitat in O. Indico.

1160. LOBATA. 270. P. testa nuda lobata. *M. L. U.* 547. n. 147.\* Habitat in O. Indico. Testa membranacea, dum valvulæ explicantur obcordata: lobis lateralibus rotundatis latioribus; a cardine ad lobos nervus; a nervo lineæ laterales ductæ.

317. ARGONAUTA. Animal Sepia. Testa univalvis, spiralis, involuta, membranacea, unilocularis.

1161. ARGO. 271. A. carina subdentata. *M. L. U.* 548. n. 148.\*—*Bellon. aqu. t.* 380. *Nautilus*.—*Bonan. recr. 1. f.* 13. *Nautilus s. Naupilius*.—*List. conch. 4. naut. t.* 3, 4.—*Rumph. mus. t.* 18. f. A, B. 1. 4. *Nautilus tenuis*.—*Gualt. test. t.* 11, 12. f. A, B, C. *Cymbium*.—*Argenv. conch. t.* 8. f. A, B, C. *Nautilus papyraceus*.—*Olear. mus. 66. t.* 32. f. 4. *Nautilus*.—*Ginan. adr. 2. t.* 3. f. 29.—*Seb. mus. 3. t.* 84. f. 4—12.—*Klein. ostr. t.* 1. f. 3. *Nautilus sulcatus*.—*Tessin. epist. 1. n.* 28. *Cymbium*. Habitat in Pelago, M. Indico, Mediterraneo.\* Majorem inter et minorem ex multis speciminibus limites non attingo. Navigat emissa aqua exonerata sentina supinus in summa aquarum, membranam miræ tenuitatis extendit. Brachia duo retorquens, cæteris subremigans, velificat, demum hausta se mergens aqua.—*Plin. ix.* 29.

1161. CYMBIUM. 272. A. carina rugosa mutica. *Gualt. test. t.* 12. f. D. Habitat in M. Mediterraneo; minuta. Magnitudo vix minimæ arenulæ, oculo armato lustranda.

318. NAUTILUS. Animal (*Rumph. mus. t.* 17. f. D.). Testa univalvis, isthmis perforatis concamerata, polythalamia.

\* *Spirales, rotundati.*

1161. POMPILIUS. 273. N. testa spirali, apertura cordata, anfractibus contiguis obtusis lævibus. *M. L. U.* 549. n. 149.\*—*Rond. aqu. 2. p.* 97. *Cochlea margaritifera*.—*Bellon. aqu. t.* 382. *Nautilus alter*.—*Jonst. aquat. t.* 10. f. 1, 2, 7.—*List. conch. 4. Nautil. t.* 1. f. 1, 2, 3.—*Rumph. mus. t.* 17. f. A, B, C. *Nautilus major crassus*.—*Bonan. recr. 1. t.* 1, 2.—*Gualt. test. t.* 17, 18.—*Argenv. conch. t.* 8. f. E, F.—*Pet. amb. t.* 3. f. 7; *gaz. t.* 99. f. D.—*Breyn. polyth.* 14.—*Klein. ostr. t.* 1. f. 1, 2.—*Seb. mus. 3. t.* 84. f. 1—3. Habitat in India, Africa.

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Domunculam alienam, quemadmodum Cancer Diogenes s. Bernhardus, intrasse Sepiam, cum non connexa sit testæ, sibi adeo alienæ, qui non crederet, nisi tot testes nobis obstringerent, qui propriis oculis viderunt Argonautam velificantem?

Testa pulchre pictura decorticata elaborata, præparata ad pocula aquæ potatorum orientalium.

1162. *CALCAR*. 274. N. testa spirali, apertura lineari, anfractibus contiguis, geniculis elevatis. *Planc. conch.* 12. t. 1. f. 3, 4.—*Gualt. test. t.* 19. f. C, B.—*Lederm. micr. t.* 8. f. c, d. Habitat in M. Adriatico; minutus.

1162. *CRISPUS*. 275. N. testa spirali, apertura semicordata, anfractibus contiguis, geniculis crenatis. *Planc. conch.* 10. t. 1. f. 2.—*Gualt. test. t.* 19. f. A, D.—*Ginan. adr. t.* 14. f. 112.—*Lederm. micr. t.* 8. f. 6. Habitat in M. Mediterraneo; minutus.

1162. *BECCARII*. 276. N. testa spirali, apertura obovata, anfractibus contiguis torulosis, geniculis insculptis. *Planc. conch.* 8. t. 1. f. 1.—*Gualt. test. t.* 19. f. H, H, I.—*Ginan. adr. t.* 14. f. 111.—*Lederm. micr.* 16. t. 8. f. a, et t. 4. f. B. Habitat in M. Adriatico, Mediterraneo, D. D. *Kähler*; minutus.

1162. *RUGOSUS*. 277. N. testa spirali, apertura lineari, anfractibus contiguis compressis incrassato-marginatis. Habitat in M. Australi, D. *Brunniche*; minutus. Testa alba, depresso-plana, dissepimentis prominulis s. rugæ transversæ secundum dissepimenta, e quibus factæ.

1163. *UMBILICATUS*. 278. N. testa spirali, apertura compresso-lineari, anfractibus contiguis compressis, umbilico concavo. *Column. phytob.* 2. t. 38. f. E. Habitat Liburni, D. D. *Kähler*; minutus. Testa sulcis transversis secundum dissepimenta oblique articulata est, præsertim carinæ propius.

1163. *SPIRULA*. 279. N. testa spirali, apertura orbiculari, anfractibus disjunctis cylindricis. *M. L. U.* 549. n. 150.\*—*Swammerd. bibl.* 1. t. 7. f. 7, 8.—*Bonan. kirch.* 1. f. 39.—*List. conch.* 4. *Naut. t.* 1. f. interior.—*Argenv. conch. t.* 29. f. K.—*Gualt. test. t.* 19. f. E.—*Rumph. mus. t.* 20. f. 1.—*Breyn. polyth.* 21. f. 2.—*Klein. ostr. t.* 1. f. 6. Habitat in America, Amboina, Moluccis.

1163. *SEMILITUUS*. 280. N. testa recta, apice incurvato-spirali, anfractibus contiguis.† *Column. phytob.* 2. t. 38. f. D. *Semi-Lituus*. Habitat Liburni; minutus.

\*\* *Elongati, erectiusculi.*

1163. *OBLIQUUS*. 281. N. testa recto-subarcuata, articulis oblique striatis. *Gualt. test. t.* 19. f. N. Habitat in M. Adriatico, Mediterraneo; minutus.

1163. *RAPHANISTRUM*. 282. N. testa recta subcylindrica, articulis torosis: striis elevatis duodenis, siphone centrali regulari. *Lederm. micr. t.* 4. f. X. *posterior*. Habitat in M. Mediterraneo. *Cl. C. Allioni*.

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NAUTILI plurimi etiamnum in abyssu pelagi latent; varii horum tam parvi, ut armatis oculis examinandi, exceptis *Pompilio*, *Orthocerate* et *Spirula*.

Testa longitudine unguis, adeoque et inter minimos maximus, differt a N. Raphano numero striarum, magnitudine, siphone regulari, quodque versus apicem vix attenuatus.

1164. RAPHANUS. 283. N. testa recta attenuata, articulis torosis : striis elevatis sedenis, siphone sublaterali obliquo. *Planc. conch. t. 1. f. 6.*—*Gualt. test. t. 19. f. L, M.*—*Lederm. micr. t. 8. f. F, et t. 4. f. X. prior.* Habitat in M. Adriatico, Mediterraneo; minutus.

1164. GRANUM. 284. N. testa recta ovato-oblonga, articulis torosis : striis elevatis octonis interruptis, siphone obliquo. Habitat in M. Mediterraneo, *M. Kähler, M.D.*; minutus. Differt a N. 283, quod fere ovata nec longiuscula; striis tantum 8, iisque ad articulorum genicula contractis admodum et fere interruptis, unde testa reticulata apparet; ideoque vix varietatem dicerem, quamvis siphone conveniat.

1164. RADICULA. 285. N. testa recta oblongo-ovata, articulis torosis glabris.† *Planc. conch. 14. t. 1. f. 5.*—*Lederm. micr. t. 8. f. c, et t. 4. f. r, s.* Habitat in M. Adriatico; minutus.

1164. FASCIA. 286. N. testa recta, articulis striatis, geniculis lævibus elevatis. *Gualt. test. t. 19. f. O.* Habitat in M. Adriatico; minutus.

1164. SIPUNCULUS. 287. N. testa recta lævi, articulis cylindricis remotis, geniculis attenuatis cylindricis.† *Gualt. test. t. 19. f. R, S.* Habitat in Freto Siculo; minutus.

1164. LEGUMEN. 288. N. testa recta compressa articulata hinc marginata, siphone laterali. *Planc. conch. 8. t. 1. f. 7.*—*Gualt. test. t. 19. f. P.*—*Lederm. micr. t. 8. f. g.* Habitat in M. Adriatico; minutus.

1164. ORTHOCERA. 289. N. testa recta : anfractibus carinato-striatis. *It. æl. 140.*—*Mus. Tessin. 86.* *Nautilus rectus.*—*Scheuch. helv. 7. f. 8. diluv. 938.* *Alveolus.*—*Gmelin. act. petrop. vol. 3. p. 246.*—*Gron. lap. 71.* Habitat in alto pelago; fossilis. Testa frequentissima petrificata in montibus nostris calcareis, inter omnia fossilia nobis nota sæpe longissima nondum visa immutata.

319. CONUS, Animal Limax. Testa univalvis, convoluta, turbinata. Apertura effusa, longitudinalis, linearis, edentula, basi integra. Columella lævis.

\* *Truncati s. spira fere truncata.*

1165. MARMOREUS. 290. C. testa conica fusca, maculis ovatis albis, spiræ anfractibus canaliculatis. *M. L. U. 550. n. 151.\**—*Olear. mus. t. 31. f. 2.*—*Bonan. recr. 3. f. 123.*—*Rumph. mus. t. 32. f. N, I.*—*Gualt. test. t. 22. f. D.*—*Argenv. conch. t. 15. f. O.*—*Pet. gaz. t. 47. f. 11.*—*Seb. mus. 3. t. 47. f. 1-4, et t. 46. f. 1-4.*—*Regenf. conch. 20. t. 5. f. 53.* Habitat in Asia. Testa sæpe coronata, atra maculis trigono-ovatis albis.

1165. IMPERIALIS. 291. C. testa albida : fasciis longitudinalibus

lividis cingulisque linearibus albo fuscoque articulatis. *M. L. U.* 550. *n.* 152.\*—*Rumph. mus. t.* 34. *f.* H, I. *Kroonhoorn*.—*Gualt. test. t.* 22. *f.* A.—*Argenv. conch. t.* 15. *f.* F. *Corona imperialis*.—*Regenf. conch. t.* 12. *t.* 3. *f.* 35. Habitat . . . Testa sæpius coronata, albida maculis confluentibus cæsiis.

1165. LITTERATUS. 292. C. testa conica alba, punctis fuscis. *M. L. U.* 551. *n.* 153.\*—*Bonan. recr. 3. t.* 363, 132.—*Rumph. mus. t.* 31. *f.* D. *Voluta musicalis*.—*Gualt. test. t.* 22. *f.* F; *t.* 21. *f.* O, G.—*Argenv. conch. t.* 15. *f.* 1.—*Regenf. conch. t.* 12. *t.* 3. *f.* 29, et *t.* 4. *f.* 46. Habitat in O. Asiatico. Testa nivea fasciis obsoletis flavis, maculisque sparsis purpurascentibus.

1166. GENERALIS. 293. C. testa conica nitida, spira plana muricata: anfractibus canaliculatis. *List. conch. t.* 276. *f.* 35.—*Rumph. mus. t.* 33. *f.* Y.—*Gualt. test. t.* 20. *f.* G.—*Argenv. conch. t.* 15. *f.* T.—*Regenf. conch. t.* 6. *f.* 65.—*Pet. gaz. t.* 27. *f.* 11. Habitat in India orientali. Testa politissima, ferruginea s. lutea, fasciis 3, albis, interruptis s. undatis. Spira albida, anfractibus canaliculatis, medio acuminata.

1166. VIRGO. 294. C. testa conica, basi cærulescente. *M. L. U.* 551. *n.* 153.\*—*Rumph. mus. t.* 31. *f.* K. *Cereola altera*.—*Regenf. conch. t.* 8. *f.* 19.—*Gualt. test. t.* 20. *f.* B. Habitat in Africano oceano. Similis litteratis colore lacteo aut rubro maculata, basi semper violaceâ margine acuto. Spira exquisita est.

1166. CAPITANEUS. 295. C. testa conica glabra, basi fusca, spira convexuscula. *M. L. U.* 552. *n.* 155.\*— $\beta$ . *Gualt. test. t.* 20. *f.* I.— $\gamma$ . *Rumph. mus. t.* 33. *f.* K. *Voluta fasciata* 2.—*Gualt. test. t.* 22. *f.* M.—*Bonan. recr. 3. t.* 139.—*Argenv. conch. t.* 15. *f.* K.—*Olear. mus. t.* 31. *f.* 5.—*Seb. mus. 3. t.* 42. *f.* 23–25.—*Regenf. conch. t.* 7. *f.*— $\delta$ . *Bonan. recr. 3. t.* 361.—*Seb. mus. 3. t.* 42. *f.* 29, 30, 32, 28, 35. Habitat in Asia. Testa cæsia fasciis 2, albis fusco-maculatis. Spiræ anfractus convexi.

1167. MILES. 296. C. testa conica rudi, basi fusca, spira convexa. *Rumph. mus. t.* 33. *f.* W.—*Argenv. conch. t.* 15. *f.* L. *Pseudo-Architalassus*.—*Seb. mus. 3. t.* 42. *f.* 23, 24, 25. Habitat in India. Testa ignobilis pallido-testacea fasciis fusco-ferrugineis.

\*\* *Pyriformes, basi rotundata, subcylindrica, quam spira sesquiflongiore.*

1167. PRINCEPS. 297. C. testa flava: lineis fusco-purpureis longitudinalibus ramosis. *M. L. U.* 552. *n.* 156.\*—*Bonan. recr. t.* 138? Habitat . . . Lineæ latæ purpureo-fuscae longitudinales subramosæ.

1167. AMMIRALIS. 298. C. testa basi punctato-scabra. *M. L. U.* 553. *n.* 157.\*

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*Ammiratum* 298 et 316, varietates nitidas, *Turbinis scalaris* et *Ostreæ Maliei* 177 æmulas, nobilitavit docta ignorantia, pretiavit quam patiuntur opes stultitia, emittavit barbara luxuria.



*summus*.  $\beta$ . *C. testa ferruginea maculis albis sparsis; fasciisque 4 flavis tenuissime reticulatis: tertia cingulo albo maculato.* *Rumph. mus. t. 34. f. B. Opper admiral.*—*Argenv. conch. t. 15. f. N. Architalassus primus.*—*Pet. gaz. t. 28. f. 4. Male.*—*Seb. mus. 3. t. 48. f. 4, 5, 6.*

*ordinarius*.  $\gamma$ . *C. testa testacea maculis albis acutis: fasciis tribus albis subreticulatis, media cingulo articulado.* *Rumph. mus. 34. f. C. Admiral.*

*occidentalis*.  $\delta$ . *C. testa testacea albo maculata: fasciis quatuor flavis reticulatis cingulo articulado.* *Rumph. mus. t. 34. f. D.*

*Cedo-nulli*.  $\epsilon$ . *C. testa testacea albo maculata cingulisque tribus, supremo composito, omnibus punctatis.* *Seb. mus. 3. t. 48. f. 8.*

Habitat in O. Americae meridionalis, pretiosus, at pretiosissimus  $\epsilon$ .

1167. VICARIUS. 299. *C. testa testacea albo maculata, fasciis 4 flavis immaculatis: secunda angulo divisa.* *Argenv. conch. t. 15. f. H. Architalassus secundus.*

1168. SENATOR. 300. *C. testa conica laevi glabra, spirae anfractibus obtusis scriptis.* Habitat . . . Testa flava, albo maculata, strii transversis, numerosissimis, albo fuscoque articulatis.

1168. NOBILIS. 301. *C. testa subcylindrica laevi glabra.* *M. L. U. 554. n. 158.\*—Argenv. conch. t. 15. f. M. Tigris lutea.*—Habitat . . . Testa nitidissima, flava punctis obscurioribus striata maculisque albis sparsis.

1168. GENUANUS. 302. *C. testa cingulis linearibus albo fuscoque articulatis.* *M. L. U. 554. n. 159.\*—Rumph. mus. t. 34. f. G. Genesche Toot.*—*Bonan. recr. 3. t. 337.*

*Papilio*.  $\beta$ . *Seb. mus. 3. t. 44. f. 1-5, et t. 48. f. 1, 2, 3.*—*Argenv. conch. t. 15. f. V. Ala papilionis?* Habitat . . . Varietas  $\beta$  fasciis connexis ocellis pupillatis.

1168. GLAUCUS. 303. *C. testa basi emarginata striata, spirae inermis anfractibus contiguus.* *M. L. U. 555. n. 160.\*—Rumph. mus. t. 33. f. G. G. Botervegie von Boer.* Habitat in Asia.

1168. MONACHUS. 304. *C. testa gibba fusco-cærulescente nebula acuta, basi striata.* *M. L. U. 555. n. 161.\*—Bonan. recr. 3. t. 126.—Rumph. mus. t. 33. f. CC. Capucinus s. Anicula.*—*Regenf. conch. t. 12. f. 68.* Habitat . . .

1168. MINIMUS. 305. *C. testa cinerascente punctis oblongis cincta.* *M. L. U. 556. n. 162.\*—Argenv. conch. t. 15. f. A. Minimus.* Habitat . . .

1168. RUSTICUS. 306. *C. testa ovata, basi rugoso muricatoque scabra, spira conico-convexa.* *M. L. U. 556. n. 163.\*—Rumph. mus. t. 32. f. R. Voluta cinerea.*—*Guall. test. t. 25. f. R.—Argenv. conch. t. 15. f. D.* Habitat in Africa. Testa livida, fascia albido-nebulosa.

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Coronatae testæ vocantur, quarum anfractus superne tantum notantur tuberculis s. mucronibus; inter testas coronatas et calvas nulla datur differentia specialis.

1169. MERCATOR. 307. C. testa ovata alba, fasciis reticulatis flavis. *M. L. U.* 557. n. 164.\*—*Argenv. conch. t.* 15. f. P.—*Bonan. recr. 3. t.* 136.—*List. conch. t.* 758. f. 3, et t. 788. f. 41.—*Adans. seneg. 1. t.* 6. f. 3. Habitat . . .

1169. BETULINUS. 308. C. testa basi subemarginata rugosa, spira planiuscula mucronata. *M. L. U.* 557. n. 169.\*—*Gualt. test. t.* 21. f. B.—*Olear. mus. t.* 32. f. 3.—*Rumph. mus. t.* 31. f. C.—*Seb. mus. 3. t.* 45. f. 1-7, 10, 11. Habitat . . .

1169. FIGULINUS. 309. C. testa basi emarginata rugosa, spira acuminata: anfractibus planiusculis. *M. L. U.* 558. n. 166.\*—*Rumph. mus. t.* 31. f. V. *Voluta filosa*.—*Regenf. conch. t.* 10. f. 47. Habitat . . .

1169. EBRÆUS. 310. C. testa ovata alba: fasciis nigris ex maculis transversis. *M. L. U.* 558. n. 167.\*—*List. conch. t.* 779. f. 25, 26.—*Bonan. recr. 3. t.* 122.—*Rumph. mus. t.* 33. f. BB. *Musica rusticorum*.—*Gualt. test. t.* 25. f. T, Q.—*Argenv. conch. t.* 15. f. G. *Hebraica*.—*Pet. gaz. 99. f.* 12.—*Seb. mus. 3. t.* 47. f. 28, 29.—*Adans. sen. 1. t.* 6. f. 5. Habitat in India.

1169. STERCUS-MUSCARUM. 311. C. testa basi emarginata striata, spiræ anfractibus canaliculatis. *M. L. U.* 559. n. 168.\*—*Rumph. mus. t.* 33. f. Z, AA. *Voluta arenata*.—*Gualt. test. t.* 25. f. N, O, P.—*Argenv. conch. t.* 15. f. S. *Bombyx*.—*Pet. gaz. t.* 75. f. 1.—*Regenf. conch. t.* 7. f. 2.—*Seb. mus. 3. t.* 55. f. 1. Habitat in Asia.

1170. VARIUS. 312. C. testa elongata muricata, spira coronata acuta. *M. L. U.* 559. n. 169.\*—*Argenv. conch. t.* 15. f. R. Habitat . . .

\*\*\* *Elongati, basi rotundata, cylindro duplo longiore quam spira.*

1170. CLAVUS. 313. C. testa striis convexis lævibus, basi cærulescente. Habitat . . . Testa flava, maculis albis reticulata: fasciis duabus saturatoribus, maculis albis majoribus; striæ obsoletæ sunt.

1170. NUSSATELLA. 314. C. testa subcylindrica rubra inermi striis tuberculatis scabra. *Rumph. mus. t.* 33. f. EE. *Terebellum granulatum*.—*List. conch. 4. s.* 10. c. 6. t. 3. f. 2.—*Gualt. test. t.* 25. f. L.—*Argenv. conch. t.* 16. f. P. Habitat ad Nussatello insulam Asiæ. Testa pallida, reliquis longior, striis punctis fulvis scabris.

1170. GRANULATUS. 315. C. testa scabra inermi: striis sulcatis lævibus. *M. L. U.* 560. n. 170.\*—*Rumph. mus. t.* 32. f. T. *Voluta granulata*.—*Gualt. test. t.* 25. f. H. Habitat in O. Africano. Testa magis rubra magisque falcata quam in reliquis; fasciæ albæ una altera et puncta purpurea ad strias.

1170. AURISIACUS. 316. C. testa incarnata lævi fasciis albidis, anfractuum summis canaliculatis. *Rumph. mus. t.* 34. f. A. *Oranjen*

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Locus in plerisque Testaceis, etiamnum in arte deficit; pauci certe Coni Europæi.

*Admiraal*.—*Pet. amb. t. 7. f. 7.*—*Seb. mus. 3. t. 48. f. 7.* Habitat . . . Testa aurantia fasciis 3 albidis, striisque albo nigroque variis. Spira canaliculata, aurantia margine maculis oblongis albis fuscisque.

1171. MAGUS. 317. C. testa subcylindrica : fasciis longitudinalibus albo-punctatis. *M. L. U. 560. n. 171.\**—*Rumph. mus. t. 32. f. Q. Voluta maculosa.*—*Gualt. test. t. 20. f. F?*—*Seb. mus. 3. t. 44. f. 27.* Habitat . . .

1171. STRIATUS. 318. C. testa ovato-oblonga gibba nebulosa : striis tenuissimis parallelis fuscis. *M. L. U. 561. n. 172.\**—*Rumph. mus. t. 31. f. F. Voluta tigerina.*—*List. conch. t. 755. f. 7, et t. 760. f. 6.*—*Gualt. test. t. 26. f. D.*—*Argenv. conch. t. 16. f. C.*—*Pet. gaz. t. 98. f. 9.*—*Regenf. conch. 8. f. 16.*—*Seb. mus. 3. t. 42. f. 5–10.*—*Adans. seneg. 1. t. 6. f. 2.* Habitat versus littora Hitœ, inque O. Africano.

1171. TEXTILE. 319. C. testa venis reticulatis luteis, maculis luteis fuscisque. *M. L. U. 561. n. 173.\**—*Rumph. mus. t. 32. f. O, P.*—*Gualt. test. t. 25. f. X, AA.*—*Bonan. recr. 3. t. 135.*—*Argenv. conch. t. 16. f. D, I. Pannus aureus.*—*Regenf. conch. 26. t. 6. f. 62.*—*Seb. mus. 3. t. 47. f. 10, 11, 16, 17.* Habitat ad Bandam Asiæ.

1171. AULICUS. 320. C. testa venis reticulatis fasciisque longitudinalibus fuscis interruptis. *M. L. U. 562. n. 174.\**—*Bonan. recr. 3. t. 133.*—*Gualt. test. t. 25. f. Z, V.*—*Argenv. conch. t. 16. f. G. Nigella.*—*Regenf. conch. t. 8. f. 25.*—*Seb. mus. 3. t. 43. f. 1, 2, 4, 5, et t. 47. f. 13, 14, 15.* Habitat in Asia. Varietas forte præcedentis.

\*\*\*\* *Laxi, ventricosi, in dorsum disjecti, super mensam tinnitantes.*

1171. SPECTRUM. 321. C. testa cærulescente flavo-nebulosa punctis striisque albo-luteis. *M. L. U. 562. n. 175.\**—*Rumph. mus. t. 32. f. S. Voluta spectrorum.*—*Gualt. test. t. 25. f. S.*—*Regenf. conch. t. 2. f. 20.* Habitat in Asia.

1172. BULLATUS. 322. C. testa flava albo-nebulosa. *M. L. U. 563. n. 176.\**—*Gualt. test. t. 26. f. C.* Habitat . . .

1172. TULIPA. 323. C. testa oblonga gibba lævi, apertura dehiscente. *Rumph. mus. t. 34. f. K, L.*—*Argenv. conch. t. 16. f. B. Tulipa.*—*Regenf. conch. 8. t. 2. f. 20.*—*Seb. mus. 3. t. 42. f. 16.* Habitat . . . Simillimus Geographo, sed minime coronatus; cæterum testa laxè convoluta.

1172. GEOGRAPHUS. 324. C. testa oblonga gibba coronata, apertura dehiscente. *Bonan. recr. 3. t. 319.*—*Rumph. mus. t. 31. f. G. Nubecula.*—*Gualt. test. t. 26. f. E.*—*Argenv. conch. t. 16. f. A. Textile seticum.*—*Klein. ostr. t. 5. f. 90. Nubecula, Tulipa gallorum.*—*List. conch. 4. s. 10. c. 7. t. 3. f. 2.*—*Pet. gaz. t. 98. f. 8.*—*Adans. seneg. 1. t. 6. f. 8.*—*Seb. mus. 3. t. 42. f. 1, 2, 3, 4.* Habitat in Indiis.

320. CYPRÆA. Animal Limax. Testa univalvis, involuta, subovata, obtusa, lævis. Apertura utrinque effusa, linearis, utrinque dentata, longitudinalis.

\* *Mucronata*.

1172. EXANTHEMA. 325. C. testa subturbinata ferruginea maculis pallidis rotundis aspersa, linea longitudinali subramosa. *Pet. gaz. t. 96. f. 6.*—*Regenf. conch. t. 10. f. 38.*—*Seb. mus. 3. t. 76. f. 16, 18.* Habitat . . . Similis C. Mappæ, sed color atro s. rufo ferrugineus; linea longitudinalis recta uno alterove ramo; cæterum adspersa punctis latis pallidis. Spira mucrone prominens. Subtus pallida, immaculata.

1173. MAPPA. 326. C. testa subturbinata characteribus inscripta, linea longitudinali ramosa. *M. L. U. 565. n. 179.\**—*Rumph. mus. t. 38. f. B.* *Porcellana montosa.*—*Argenv. conch. t. 21. f. B.* *Carte géographique.*—*Pet. gaz. t. 96. f. 6; amb. t. 16. f. 2.* Habitat in O. Africæ. Differt a sequenti lateribus lævibus pallidis immaculatis.

1173. ARABICA. 327. C. testa subturbinata characteribus inscripta, macula longitudinali simplici. *M. L. U. 566. n. 180.\**—*Rumph. mus. t. 38. f. M.* *Porcelana literata s. arabica.*—*Barrel. rar. t. 1325. f. 20.*—*Gualt. test. t. 16. f. V.*—*List. conch. 4. s. 9. c. 2. t. 1. f. 1.*—*Seb. mus. 3. t. 76. f. 3.* Habitat in India orientali, ad Fretum Sunda. Differt a præcedenti lateribus incrassatis fusco maculatis. Intus violacea est.

1173. ARGUS. 328. C. testa subturbinata subcylindrica adspersa ocellis, subtus maculis quatuor fuscis. *M. L. U. 567. n. 181.\**—*Bonan. recr. f. 3. t. 263.*—*Barr. rar. t. 1325. f. 25.*—*Rumph. mus. t. 38. f. D.* *Argus.*—*Gualt. test. t. 16. f. T.*—*Argenv. conch. t. 21. f. D.* *Argus magnus.*—*List. conch. 4. s. 9. c. 6. t. 9.*—*Pet. gaz. t. 97. f. 6.*—*Regenf. conch. 20. t. 5. f. 57.* Habitat in O. Africæ. Subtus maculæ utrinque duæ magnæ fuscae.

1173. TESTUDINARIA. 329. C. testa obtusa subcylindrica, extremitatibus depresso. *M. L. U. 567. n. 182.\**—*List. conch. 4. s. 9. c. 5. t. 6.*—*Rumph. mus. t. 38. f. C.* *Testudinaria.*—*Pet. amb. t. 8. f. 7.*—*β. List. conch. 4. s. 10. c. 8. t. 1.* *Larva est.* Habitat in Sinu Persico. Hæc in suo genere maxima et reliquis longior; variat absque et cum spira antice manifesta.

1174. STERCORARIA. 330. C. testa subturbinata gibba livido testaceoque maculata, utrinque marginata, subtus plana. *Gualt. test. t. 15. f. S, T.*—*Column. aqu. t. 69. f. 1, 2.*—*Pet. gaz. t. 96. f. 7, 8.*—*Barr. ic. t. 1321. f. 23, et t. 1322. f. 4.*—*Adans. seneg. 1. t. 5. f. 1. A.* Habitat . . . Testa subovata gibba subturbinata undato-glauca maculis griseis fuscisque temere adspersa; antice juxta spiram macula fusca; postice depresso-marginata deflexa; subtus plana: labro interiore postice valde retuso; apertura antice valde gibba.

1174. CARNEOLA. 331. C. testa subturbinata pallida fasciis incarnatis, ore violaceo. *M. L. U.* 568. n. 183.\*—*Rumph. mus.* 38. f. K. *Carneola*.—*Pet. gaz.* t. 80. f. 8. Habitat in Asia. Testa tenuis oblonga, apertura sæpe subviolacea.

1174. ZEBRA. 332. C. testa turbinata cinerea fasciis fuscis. *Bonan. recr.* 3. t. 266.—*Argenv. conch.* t. 21. f. G.—*Seb. mus.* 3. t. 76. f. 5. Habitat . . . Statura Carneolæ, sed duplo major, spira majore evidentiore quam in reliquis. Denticuli aperturæ fusci. Venter ocellis obsoletis.

1174. TALPA. 333. C. testa subturbinata subcylindrica testacea fasciis pallidis, subtus incrassata fusca. *M. L. U.* 568. n. 168.\*—*Rumph. mus.* t. 38. f. I. *Talpa*.—*Gualt. test.* t. 16. f. N.—*Argenv. conch.* t. 21. f. H. *Talpa*.—*Pet. amb.* t. 16. f. 1.—*List. conch.* 4. s. 9. c. 4. t. 3. f. 2.—*Barrel. rar.* t. 1325. f. 19.—*Regenf. conch.* t. 10. f. 37. Habitat in Asia.

1174. AMETHYSTEA. 334. C. testa subturbinata: lateribus gibbis corticatis, dorso violaceo. *M. L. U.* 569. n. 185.\*—*Rumph. mus.* t. 39. f. Q. *Achatina*.—*Pet. gaz.* t. 32. f. 10.—*List. conch.* 4. s. 9. c. 3. t. 4. f. 3. Habitat in Madagascar.

1175. LURIDA. 335. C. testa subturbinata lurida subfasciata, extremitatibus luteis nigro-bimaculatis. *Gualt. test.* t. 13. f. I.—*Bonan. recr.* 3. t. 251.—*Argenv. conch.* t. 21. f. C. *Souris*.—*Adans. seneg.* 1. t. 5. f. D. Habitat in M. Mediterraneo.

1175. VANELLI. 336. C. testa subturbinata maculata punctis lutescentibus, extremitatibus fusco-maculatis, fauce rufa. *M. L. U.* 562. n. 186.\*—*Pet. gaz.* t. 95. f. 13. Habitat . . . Apertura inter dentes rufa.

1175. LOTA. 337. C. testa subturbinata alba, denticulis subulatis. *M. L. U.* 570. n. 187.\* Habitat . . .

1175. FRAGILIS. 338. C. testa turbinata ovata glauca testaceo-undata subfasciata. *M. L. U.* 570. n. 188.\*—*Rond. aqu.* 2. p. 102.—*Gualt. test.* t. 16. f. Q. Habitat in M. Mediterraneo. Testa structura C. arabicæ, sed picta undis longitudinalibus griseis et fasciis pallidis cincta, cæterum reliquis magis tenuis est.

\*\* *Obtusæ, absque spira manifesta.*

1175. CAPUT-SERPENTIS. 339. C. testa obtusa triquetro-gibba, postice obtusiuscula. *M. L. U.* 571. n. 189.\*—*Bonan. recr.* 3. t. 258.—*Rond. aqu.* 2. p. 103. f. 3.—*Rumph. mus.* t. 38. f. F. *Caput serpentis minus*.—*Pet. gaz.* t. 96. f. 9; *amb.* t. 12. f. 7.—*List. conch.* 4. s. 9. c. 6. t. 7. *Concha veneris maculis quasi reticulatis*.—*Gualt. test.* t. 15. f. O.—*Adans. seneg.* 1. t. 5. f. 5. Habitat in Mauritio.

1176. MAURITIANA. 340. C. testa obtusa triquetro-gibba, postice depresso-acuta; subtus nigra. *M. L. U.* 571. n. 190.\*—*Bonan. recr.*

3. f. 261.—*Rumph. mus. t. 38. f. E. Caput serpentis majus.*—*Pet. gaz. t. 96. f. 8.*—*List. conch. 4. s. 9. c. 6. t. 8.* Habitat in Mauritio, Java. Hæc magna subtus fusca; præcedens parva subtus albida. Hæc disco maculis rotundis pallidis sparsis medio gibboso.

1176. VITELLUS. 341. C. testa obtusa livida maculis albis. *M. L. U. 572. n. 191.\**—*List. conch. 4. s. 9. c. 4. t. 8. f. 2.*—*Bonan. recr. 3. f. 254.*—*Pet. gaz. t. 80. f. 2.*—*Rumph. mus. 115. t. 38. f. L. salita.* Habitat ad Sundam Asiæ.

1176. MUS. 342. C. testa obtusa retusa gibba cinerea: fascia longitudinali fusca, denticulis nigricantibus. *M. L. U. 572. n. 192.\**—*Rumph. mus. t. 39. f. S.*—*List. conch. 4. s. 9. c. 1. t. 2.*—*Argenv. conch. t. 21. f. E?*—*Seb. mus. 3. t. 76. f. 33, 34.* Habitat ad Carthagenam.

1176. TIGRIS. 343. C. testa obtusa ovata, postice obtusa, antice rotundata, linea longitudinali testacea. *M. L. U. 573. n. 193.\**—*Bonan. recr. 3. f. 231, 232.*—*Rumph. mus. t. 38. f. A. Porcellana guttata.*—*Gualt. test. t. 14. f. I, H, L, G.*—*List. conch. 4. s. 9. c. 5. t. 1.*—*Pet. gaz. t. 96. f. 17.*—*Barr. rar. t. 1325. f. 23, et t. 1326. f. 4.* Habitat in Madagascar, Java. Testa albida s. purpurascens maculis obsoletis, fuscis, confluentibus; antice posticeque cinerascens; subtus nivea.

1176. LYNX. 344. C. testa oblongo-ovata punctis fuscis lineaque flavescente, postice acutiuscula, ore rufo. *M. L. U. 573. n. 194.\**—*Gualt. test. t. 14. f. 2. C, D.*—*List. conch. 4. s. 9. c. 4. t. 9. f. 1.*—*Pet. gaz. t. 97. f. 17.* Habitat ad Madagascar. Præcedenti similis nitidaque, sed parva.

1177. ISABELLA. 345. C. testa obtusa subcylindrica, extremitatibus luteis. *M. L. U. 574. n. 195.\**—*Rumph. mus. t. 39. f. G. Isabella.*—*Argenv. conch. t. 21. f. P.*—*Pet. amb. 16. f. 16; gaz. t. 97. f. 16.*—*List. conch. 4. s. 9. c. 2. t. 2. f. 2.* Habitat in Mauritio, Madagascar.

\*\*\* *Umbilicatæ.*

1177. ONYX. 346. C. testa umbilicata, subtus fusca, supra albida. *M. L. U. 574. n. 196.\**—*Bonan. recr. 3. t. 255.*—*Rumph. mus. t. 38. f. G. Porcellana cærulea.*—*Gualt. test. t. 15. f. N.* Habitat in Asia. Testa magnitudine pollicis, subtus atrata; supra lutea, albido-flava, similis cæterum Capiti-Serpentis; an mutata?

1177. CLANDESTINA. 347. C. testa umbilicata, lincis transversis subtilissimis flavescens passim concurrentibus. Habitat . . . *J. Zoega* hanc observavit. Testa lævis livida, magnitudine C. Aselli, fascia una alterave pallida obsoleta. Notæ propriæ sunt striæ pictæ, luteæ, transverse passim concurrentes, vix nisi oculo armato manifestæ. Subtus testa alba immaculata est.

1177. SUCCINCTA. 348. C. testa umbilicata, labio interiore utraque extremitate rotundato. *M. L. U.* 575. n. 197.\* Habitat . . .

1177. ZICZAC. 349. C. testa umbilicata, subtus lutea punctis fuscis, extremitatibus maculis duabus fuscis. *M. L. U.* 575. n. 198.\*—*Bonan. recr.* 3. t. 242.—*List. conch.* 4. s. 9. c. 3. t. 1. f. 1. *Concha ven. undatim depicta.*—*Pet. gaz.* t. 12. f. 7.—*Seb. mus.* 3. t. 55. f. 19. n. b, c, d. Habitat . . .

1178. HIRUNDO. 350. C. testa umbilicata, supra cærulescente, extremitatibus maculis duabus fuscis. *M. L. U.* 576. n. 199.\*—*Pet. gaz.* t. 30. f. 3. Habitat . . .

1178. ASELLUS. 351. C. testa umbilicata alba: fasciis tribus fuscis. *M. L. U.* 577. n. 200.\*—*Bonan. recr.* 3. f. 236.—*Barrel. rar.* t. 1326. f. 27.—*Rumph. mus.* t. 39. f. M. *Asellus.*—*Argenv. conch.* t. 21. f. T. *Asellus.*—*Gualt. test.* t. 15. f. M.—*Pet. gaz.* t. 97. f. 11; *amb.* t. 16. f. 18.—*List. conch.* 4. s. 9. c. 6. t. 3. f. 2.—*Adans. seneg.* 1. t. 5. f. H. Habitat in Maldivis.

1178. ERRONES. 352. C. testa umbilicata: macula testacea æquali. *M. L. U.* 577. n. 202.\* Habitat . . . Differt a C. stolidia macula una, nec pluribus.

\*\*\*\* *Marginatæ.*

1178. CRIBRARIA. 353. C. testa umbilicata marginata lutea. punctis rotundis albis. *M. L. U.* 577. n. 201.\*—*Argenv. conch.* t. 21. f. X. *Argus minor.*—*Pet. gaz.* t. 80. f. K; *an* t. 8. f. 3?—*List. conch.* 4. s. 9. c. 6. t. 3. f. 2.—*Regenf. conch.* t. 12. f. 74. Habitat . . .

1178. MONETA. 354. C. testa marginato-nodosa albida. *M. L. U.* 578. n. 203.\*—*Bonan. recr.* 3. f. 233.—*Barrel. rar.* t. 1326. f. 26.—*List. conch.* 4. s. 9. c. 8. t. 1. f. 3, 4. *Moneta nigritarum.*—*Rumph. mus.* t. 39. f. C. *Thoracium vulgare s. Cauricum.*—*Gualt. test.* t. 14. f. 4, 5.—*Argenv. conch.* t. 21. f. K. *Moneta Congo.*—*Pet. amb.* t. 16. f. 14; *gaz.* t. 97. f. 8. *Concha veneris africana s. Moneta nigritarum.* Habitat ad Africam, in M. Mediterraneo: Alexandriæ; imprimis in Maldivis, ubi a fœminis legitur sub aqua per tres dies a plenilunio vel ante novilunium, unde transportatur navibus in Bengalam, Siam, Americam, pro Moneta Nigritarum. *Amœn. acad.* 3. p. 239.

1179. ANNULUS. 355. C. testa marginata, dorso annulo flavo circumdato. *M. L. U.* 578. n. 204.\*—*Rond. test.* 2. p. 103. f. 4.—*Rumph. mus.* t. 39. f. D. *Thoracium quadratum.*—*Gualt. test.* 14. f. 1, 2.—*Pet. gaz.* t. 6. f. 8. Habitat ad Amboinam frequens; Alexandriæ.

1179. CAURICA. 356. C. testa margine gibbo inæquali albido fusco-punctato, dorso nebulato-testaceo. *Rumph. mus.* t. 38. f. P.—*Gualt. test.* t. 15. f. X. Habitat in Oceano Indico.

1179. EROSA. 357. C. testa deroso-marginata flava albo-punctata, lateribus macula subfusca. *M. L. U.* 578. n. 205.\*—*Rumph. mus.* t. 39.

*f. A. Thoracium oculatum.*—*Gualt. test. t. 15. f. H.*—*List. conch. 4. s. 9. c. 6. t. 2. f. 1.*—*Pet. gaz. t. 97. f. 19.* Habitat in Mauritio et insula Adscensionis. Labium exterius transverse profunde sulcatum, macula ferruginea in utroque latere.

1179. FLAVEOLA. 358. C. testa deroso-marginata flavescente albo-punctata: lateribus punctis fuscis obsoletis subsparsis. *M. L. U. 581. n. 209.\** Habitat . . .

1179. SPURCA. 359. C. testa submarginata lutescente, luteo irrorata, lateribus fusco-punctatis. Habitat in M. Mediterraneo. Testa ovata, lævis, lutescens, punctis pallidioribus aut saturationibus confertim adpersa; margo supra crenulatus colore fusco; labium interius postice reflexo apice, quod huic proprium. Testa interdum occurrit livida immaculata diaphana, nondum dentes adepta, sed tamen magnitudine justa, unde apparet has senectam exuere. *n. 389.*

1180. STOLIDA. 360. C. testa marginata cinerea, testaceo quadrato variegata. *M. L. U. 580. n. 207.\**—*Argenv. conch. t. 21. f. Y.*—*Pet. gaz. t. 97. f. 19.* Habitat . . .

1180. HELVOLA. 361. C. testa marginata triquetro-gibba albo-punctata, postice crosa, subtus flava immaculata. *M. L. U. 579. n. 206.* Habitat . . .

1180. OCELLATA. 362. C. testa submarginata lutea: ocellis nigris. *M. L. U. 580. n. 208.*—*List. conch. 4. s. 9. t. 696. f. 43.*—*Bonan. recr. 3. t. 247.\**—*Pet. gaz. t. 9. f. 7.* Habitat . . .

1180. PORARIA. 363. C. testa marginata subviolacea albo-punctata. *M. L. U. 581. n. 210.\** Habitat . . .

1180. PEDICULUS. 364. C. testa marginata transversim sulcata. *M. L. U. 582. n. 211.\**—*List. conch. 4. s. 9. c. 7. t. 1;* *angl. 168. t. 3. f. 17.* *Concha veneris exigua alba striata.*—*Rumph. mus. t. 39. f. P. Pediculus.*—*Gualt. test. t. 14. f. P, et t. 15. f. P, R.*—*Argenv. conch. t. 21. f. L. Pediculus.*—*Pet. amb. t. 16. f. 22.*—*Barr. rar. t. 1326. f. 28.*—*Adans. seneg. 1. t. 5. f. 3.*—*Ginan. 2. t. 13. f. 109.* Habitat in Jamaica, Europa. Hæc maculas gerit dorsales 3 fuscas. Indica dorso exarato sulco longitudinali; Europæa eo sulco destituta; Anglica tota absque maculis alba.

1181. NUCLEUS. 365. C. testa utrinque marginata subrostrata rugosa: supra punctata tuberculis. *M. L. U. 582. n. 212.\**—*Rumph. mus. t. 36. f. I. Nux avellana granulata.*—*Gualt. test. t. 14. f. S.*—*Argenv. conch. t. 21. f. V. Variolæ.*—*Pet. amb. t. 16. f. 11, et gaz. t. 97. f. 12.*—*List. conch. 4. s. 9. c. 8. t. 2. f. 3.*—*Seb. mus. 3. t. 55. f. 22.* Habitat in O. Indiæ orientalis.

1181. STAPHYLÆA. 366. C. testa subrostrata, punctis elevatis sine striis, extremitatibus luteis. *M. L. U. 583. n. 213.\**—*Argenv. conch. t. 21. f. S. Porcellio.* Habitat . . .

1181. CICERCULA. 367. C. testa utrinque rostrata, adpersa punc-



tis elevatis. *Rumph. mus. t. 39. f. 9.*—*Gualt. test. t. 14. f. T.* Habitat in M. Mediterraneo.

1181. GLOBULUS. 368. C. testa utrinque rostrata lævi. *M. L. U. 583. n. 214.\**—*Rumph. mus. t. 39. f. L.* Globulus.—*Gualt. test. t. 14. f. M.*—*Pet. amb. t. 16. f. O, et gaz. t. 97. f. 14.*—*Barrel. rar. t. 1326. f. 31.* Habitat in Asia.

321. BULLA. Animal Limax. Testa univalvis, convoluta, inermis. Apertura subcoarctata, oblonga, longitudinalis, basi integerrima. Columella obliqua, lævis.

1181. OVUM. 369. B. testa ovata obtuse subbirostri, labro dentato. *M. L. U. 584. n. 215.\**—*Bonan. recr. 3. t. 252.*—*Rumph. mus. t. 38. f. Q.* Ovum.—*List. conch. 4. s. 9. c. 9. t. 1. f. 4.*—*Gualt. test. t. 15. f. A.*—*Argenv. conch. t. 21. f. A.* Ovum.—*Pet. gaz. t. 97. f. 7; amb. t. 8. f. 6.* Habitat in O. Asiatico. Hæc media inter Cypræas et Bullas; labro exteriore præcedentibus convenit, interiore lævi ad sequentes accedit.

1182. VOLVA. 370. B. testa birostri, rostris elongatis striatis acutis. *M. L. U. 584. n. 216.\**—*List. conch. 4. s. 9. c. 9. t. 1. f. 1.*—*Seb. mus. 3. t. 55. f. 13–16.*—*Argenv. conch. t. 21. f. I.* Radius textoris. Habitat ad Jamaicam.

1182. BIROSTRIS. 371. B. testa birostri, margine extus incrassato, rostris elongatis lævibus. Habitat ad Javam. Testa similis B. Volvæ, sed minor, magnitudine fabæ, angustior, lævis, incarnato-albida. Rostra æqualia, lævia, fere ventris testæ longitudine, oblique truncata, altero parum adscendente. Margo extus longitudinalis incrassatus. Rima subæqualis, versus rostrum adscendens latior.

1182. SPELTA. 372. B. testa oblonga utrinque obtusiuscula æquali, labro arcuato: margine intus incrassato. *Gualt. test. t. 15. f. 4.*—*Pet. gaz. t. 66. f. 1, 3.*—*Ginan. adr. 2. t. 13. f. 95.*—*Barrel. ic. 31, 32, 35.* Habitat in M. Mediterraneo. *F. Logie.* Testa alba, lævis, semine tritici duplo major, vix birostris, sed magis patula. Apertura longitudinalis, lunata cum denticulo obsoleto ad apicem columellæ. Spira externa omnino nulla.

1182. VERRUCOSA. 373. B. testa transverse angulata, aucta utrinque puncto osseo. *M. L. U. 585. n. 217.\**—*Rumph. mus. t. 38. f. H.* Jambo alba.—*List. conch. 4. s. 9. c. 9. t. 2. f. 3.*—*Gualt. test. t. 16. f. F.*—*Argenv. conch. t. 21. f. M.*—*Pet. gaz. t. 99. f. 2; amb. t. 16. f. 23.* Gibba.—*Seb. mus. 3. t. 55. f. 17.* Habitat in India Orientali.

1183. GIBBOSA. 374. B. testa angulata: cingulo elevato. *M. L. U. 585. n. 218.\**—*Column. purp. 29. t. 30. f. 5.*—*List. conch. 4. s. 9. c. 9. t. 1. f. 2, 3.*—*Bonan. recr. 3. t. 249, 339.*—*Gualt. test. t. 15. f. 3.*—*Argenv. conch. t. 21. f. Q.*—*Pet. gaz. t. 15. f. 5.*—*Seb. mus. 3. t. 55. f. 18.* Habitat in Brasilia.

1183. NAUCUM. 375. B. testa rotundata pellucida transversim

substriata, utrinque umbilicata. *M. L. U.* 586. n. 219.\*—*Bonan. recr.* 3. t. 4.—*Rumph. mus. t.* 27. f. *H.* *Bulla.*—*List. conch.* 4. s. 9. c. 10. t. 1. f. ult.—*Gualt. test. t.* 13. f. *GG.*—*Argenv. conch. t.* 20. f. *Q.*—*Seb. mus. 3. t.* 38. f. 45. Habitat in Asia.

1183. *APERTA.* 376. B. testa subrotunda pellucida transversim substriata tota hians. *Gualt. test. t.* 13. f. *EE.* Habitat ad Cap. b. Spei. *Laur. Spengler.* Simillima B. Nauco, antice etiam umbilicata, sed tota ita hians, ut universa testa intus pateat, modo labium interius versus antica parum involutum. An mera varietas?

1183. *HYDATIS.* 377. B. testa rotundata pellucida longitudinaliter substriata, vertice umbilicato. *Gualt. test. t.* 13. f. *DD.* Habitat in M. Mediterraneo. Magnitudo sæpius pisi minoris.

1183. *AMPULLA.* 378. B. testa rotundata opaca, vertice umbilicato. *M. L. U.* 586. n. 220.\*—*Bonan. recr.* 3. t. 3.—*List. conch.* 4. s. 9. c. 10. t. 1. f. penult.—*Rumph. mus. t.* 27. f. *G.* *Bulla.*—*Gualt. test. t.* 12. f. *E, H, I, F, G.*—*Grev. mus. t.* 9. f. 7, 8.—*Pet. gaz. t.* 50. f. 13; t. 99. f. 14.—*Columnn. aqu. t.* 69. f. 3.—*Barr. ic. t.* 1326. f. 37.—*Adans. seneg. t.* 1. f. 2.—*Seb. mus. 3. t.* 38. f. 34–44.—*Regenf. conch.* 20. t. 5. f. 58, et t. 8. f. 21. Habitat ad ins. Mauritiæ, Jamaicam, Barbados, Africam.

1184. *LIGNARIA.* 379. B. testa obovata oblongiuscula transverse striata, vertice subumbilicato. *List. conch. t.* 714. f. 71. Habitat . . . e museo Tessiniano. Testa statura fere Ampullæ, sed magis versus apicem angustata, minus umbilicata, colore fere ligni; intus alba et columella flexuosa, ut oculo aditus pateat ad verticem usque.

1184. *PHYSIS.* 380. B. testa rotundata glaberrima pellucida lineis crispata, spira retusa. *M. L. U.* 587. n. 221.\*—*Gualt. test. t.* 13. f. *FF.*—*Argenv. conch. t.* 20. f. *I.*—*Seb. mus. 3. t.* 38. f. 146–50. Habitat . . .

1184. *AMPLUSTRE.* 381. B. testa subrotunda, spira elevata obtusa, fasciis incarnatis. *M. L. U.* 587. n. 222.\* Habitat in Asia. Testa alba fasciis rubris.

1184. *FICUS.* 382. B. testa obovato-clavata reticulato-striata, cauda exserta, spira oblitterata. *M. L. U.* 637. n. 314. *Murex Ficus.\**—*List. conch.* 4. s. 10. c. 8. t. 2. f. 3.—*Bonan. recr.* 3. t. 15.—*Rumph. mus. t.* 27. f. *K.* *Ficus.*—*Pet. amb. t.* 6. f. 9.—*Gualt. test. t.* 26. f. *I, M.*—*Argenv. conch. t.* 20. f. *O.*—*Klein. ostr. t.* 5. f. 93.—*Seb. mus. 3. t.* 38. f. 13–24, et t. 68. f. 1–6. Habitat in O. Indico ad Amboinam.

1184. *RAPA.* 383. B. testa rotundato-turbinata substriata, cauda curva, spira exquisita. *M. L. U.* 638. n. 315. *Murex Rapa.\**—*Rumph. mus. t.* 27. f. *F.* *Rapa.*—*Pet. amb. t.* 9. f. 8.—*Gualt. test. t.* 26. f. *H.*—*Argenv. conch. t.* 20. f. *K.* *Rapa.*—*Klein. ostr. t.* 4. f. 80.—*Seb. mus. 3. t.* 38. f. 13–16, 18–20, 22, 23, et t. 38. f. 7, 8. Habitat in O.

Asiatico, rarius. Muricibus proxima ob caudam, sed textura et omnia hujus cum præcedentis naturam Bullæ indicant.

1185. CANALICULATA. 384. B. testa cylindrica, spiræ anfractibus canaliculatis. *M. L. U.* 588. n. 224.\* Habitat . . . T. testacea pallido nebulata.

1185. CONOIDEA. 385. B. testa oblongo-turbinata lævi, basi substriata, suturis crenulatis. Habitat . . . Testa magnitudine glandis, albido-flavescens, structura conï, vix striata, nisi versus basin striis aliquot punctatis. Spira conica, testa dimidio brevior. Anfractus tenues, imbricati ad marginem punctis quasi crenulati. Basis emarginata. Columella plicis 5 s. 6. Labium obtusum.

1185. FONTINALIS. 386. B. testa ovata pellucida contraria, spira obsoleta, apertura ovato-oblonga. *Fn. suec.* 2160.\*—*It. wgoth.* 49. Habitat in lacuum plantis subaquaticis.

1185. HYPNORUM. 387. B. testa ovata pellucida contraria, spira prominente, apertura ovato-lanceolata. *Fn. suec.* 2159.\* Habitat in Europæ Muscis humentibus.

1185. TEREHELLUM. 388. B. testa cylindrica, spira subulata basi truncata. *M. L. U.* 564. n. 178.\*—*Bonan. recr.* 3. t. 57.—*List. conch.* 4. s. 10. c. 6. t. 1.—*Rumph. mus.* t. 30. f. S. *Terebellum.*—*Pet. amb.* t. 13. f. 24.—*Argenv. conch.* t. 14. f. G. Habitat in Asia. Textura Bullæ, apertura Coni; in bivio positæ.

1185. CYPRÆA. 389. B. testa ovata, spira oblitterata apice prominulo, apertura postice dilatatiore, columella torta. Habitat in M. Mediterraneo. *Larva.* Magnitudo glandis et ultra. Hic posui, ne testa confundat, quæ demum labia approximât, dentesque acquirit 359.

1186. VIRGINEA. 390. B. testa subturrita erecta, columella truncata sanguinea. *M. L. U.* 612. n. 267. *Buccinum virgineum.*—*Bonan. recr.* 3. t. 66.—*List. conch.* t. 12.—*Pet. gaz.* t. 22. f. 7.—*Gualt. test.* t. 6. f. A.—*Argenv. conch.* t. 14. f. N.—*Klein. ostr.* t. 7. f. 116.—*Seb. mus.* 3. t. 40. f. 38, 39.—*Regenf. conch.* t. 10. f. 46.— $\beta$ . *Gualt. test.* t. 6. f. C.—*Argenv. conch.* t. 14. f. M.—*Seb. mus.* 3. t. 39. f. 62–74. Habitat in Africæ fluviis. Varietas  $\beta$  eadem statura, magnitudine, sed colore diversa.

1186. ACHATINA. 391. B. testa ovata, apertura obovata apiceque sanguineis, columella truncata. *M. L. U.* 589. n. 225.\*—*Column. aquat.* t. 16. *Buccinum exoticum.*—*List. conch.* t. 579.—*Bonan. recr.* 3. t. 192.—*Gualt. test.* t. 45. f. B.—*Argenv. conch.* t. 13. f. E.—*Klein. ostr.* t. 3. f. 60.—*Pet. gaz.* t. 44. f. 7.—*Seb. mus.* 3. t. 71. f. 1–5, 7–9.—*Adans. seneg.* 1. t. 1. f. 1. Habitat in O. Americano, media inter Helices et Bullas. Genus dubium, vix Bullæ ob dissectam et truncatam columellam, uti præcedentis. Varietas livida lineis fuscis, undulatis, longitudinalibus: intus albida.

322. VOLUTA. Animal Limax. Testa unilocularis, spiralis. Apertura ecaudata, subeffusa. Columella plicata: labio umbilicove nullo.

\* *Apertura integra.*

1186. AURIS-MIDÆ. 392. V. testa coarctata ovali-oblonga, spira rugosa, columella bidentata. *M. L. U.* 589. n. 226.\*—*Bonan. Kirch.* 3. t. 412.—*List. conch. t.* 32. f. 30.—*Rumph. mus. t.* 33. f. HH. *Auris midæ.*—*Gualt. test. t.* 55. f. G.—*Argenv. conch. t.* 13. f. G. *Auricula midæ.*—*Klein. ostr. t.* 7. f. 122.—*Seb. mus. 3. t.* 71. f. 6, 22, 21. Habitat in Indiæ orientalis paludibus. Hæc, antecedens et insequens, quasi mediæ Bullas inter et Helices.

1187. AURIS-JUDÆ. 393. V. testa coarctata oblonga, spira lævi, columella tridentata. *M. L. U.* 590. n. 226.\* Habitat . . . Affinis nimium præcedenti.

1187. TORNATILIS. 394. V. testa coarctata ovata substriata, spira elevata acutiuscula, columella uniplicata. Habitat . . . Testa rubicunda fasciis albis.

1187. SOLIDULA. 395. V. testa coarctata oblongo-ovata opaca striata, spira elevata acutiuscula, columella subplicata. *M. L. U.* 590. n. 228.\*—*Bonan. recr. 3. t.* 143. Habitat . . . Testa albo griseoque longitudinaliter lineata.

1187. LIVIDA. 396. V. testa coarctata ovato-cylindrica, spira sublevata obtusiuscula, columella quinqueplicata. *M. L. U.* 591. n. 229.\*—*Gualt. test. t.* 25. f. B. Habitat in Africa. Testa livida fasciis transversis, pallidis, obsoletis.

1187. COFFEA. 397. V. testa coarctata lævi, spira obtusa, apertura utrinque dentata. Habitat . . . Testa lurido-livida, facie Coni, sed apertura postice coarctata.

\*\* *Cylindroideæ s. subcylindricæ, emarginatæ.*

1187. PORPHYRIA. 398. V. testa emarginata cylindroide lævi, spiræ basi oblitterata, labro medio retuso, columella oblique striata. *M. L. U.* 592. n. 230.\*—*List. conch. t.* 727.—*Bonan. recr. 3. t.* 142.—*Rumph. mus. t.* 39. f. 1.—*Gualt. test. t.* 24. f. O, P.—*Argenv. conch. t.* 16. f. K. *Porphyria.*—*Regenf. conch. 8. t.* 2. f. 15. Habitat in Brasilia. Testa sequenti quadruplo major, incarnata, scripta lincis testaceis ziczac, in formam castrorum. Affinitas tanta cum sequenti, ut potius varietas, quam distincta species, quamvis pretium hanc nobilitaverit.

1188. OLIVA. 399. V. testa emarginata cylindroide lævi, spiræ basi reflexa, columella oblique striata. *M. L. U.* 593. n. 231.\*—*List. conch. 718. f.* 2.—*Rumph. mus. t.* 39. f. 2-5. *Cylinder.*—*Bonan. recr. 3. t.* 141.—*Gualt. test. t.* 23. f. A-N.—*Argenv. conch. t.* 16. f. R. *Literata et N. Q. oliva.*—*Regenf. conch. 2. t.* 1. f. 2.—*Seb. mus. 3. t.* 53.

*f. A-N.* Habitat in M. Indico. Varietates coloribus infinite ludentibus; Litterata præfertur.

1188. *ISPIDULA*. 400. V. testa emarginata cylindroide lævi, spira prominente margine unico, columella oblique striata. *M. L. U.* 594. n. 232.\*—*Rumph. mus. t.* 39. *f.* 6, 7.—*Pet. gaz. t.* 59. *f.* 8.—*Bonan. recr. 3. t.* 369.—*Barr. ic.* 1322. *f.* 17.—*Adans. seneg. 1. t.* 4. *f.* 7. Habitat . . . Varietates potius hæ tres, quam distinctæ species.

\*\*\* *Ovatæ s. obovatæ, effusæ, emarginatæ.*

1188. *DACTYLUS*. 401. V. testa obovata lævi decussatim striata obtusa, columella sexplicata. *Gualt. test. t.* 28. *f.* P. Habitat in India. Testa albido incarnatoque variegata. Labium vix crenatum. Columellæ plicæ valde compressæ.

1189. *MILIARIA*. 402. V. testa subemarginata obovata alba, spira oblitterata flavcola, columella oblique striata. *Barr. ic.* 30. Habitat in Mari Mediterraneo frequens. Similis sequenti, sed minor, glaberima, spira lineola flava.

1189. *MONILIS*. 403. V. testa integra obovata alba, spira oblitterata alba, columella oblique striata. Habitat in China, unde Armillæ, Monilia.

1189. *PERSICULA*. 404. V. testa emarginata ovata lævi, spira retuso-umbilicata, columella septemplicata, labro marginato crenato. *Pet. gaz. t.* 8. *f.* 2.—*Barrel. icon.* 1326. n. 33.—*Gualt. test. t.* 28. *f.* C, D, E.— $\beta$ . *Pet. gaz. t.* 8. *f.* 10.—*Bonan. recr. 3. t.* 238. male.—*Gualt. test. t.* 28. *f.* B.—*Adans. seneg. 1. t.* 4. *f.* 4. Habitat in O. Africano. Variat colore: alia cingulata striis rubris; alia punctata maculis sanguineis.

1189. *PALLIDA*. 405. V. testa integra oblongo-ovata, spira elevata, columella quadriplicata. *M. L. U.* 588. n. 223.\*—*List. conch. t.* 714. *f.* 70. a.—*Adans. seneg. 1. t.* 5. *f.* 3. Habitat in O. Africano. Testæ venter superne minime subcarinatus est, ut in V. glabella, sed æqualis.

1189. *FABA*. 406. V. testa subemarginata ovata lævi subplicata, spira prominente, columella quadriplicata, labro marginato crenulato. *Gualt. test. t.* 28. *f.* Q. Habitat in O. Africano. Testa postice vix emarginata, sed margine tenuiore et arcuato notata.

1189. *GLABELLA*. 407. V. testa integerrima ovata lævi, spira lævigata, columella quadriplicata, labro gibbo-marginato denticulato. *M. L. U.* 574. n. 233.\*—*Gualt. test. t.* 28. *f.* L.—*Bonan. recr. 3. t.* 326.—*Klein. ostr. t.* 5. *f.* 92.—*Adans. seneg. t.* 4. *f.* 1. Habitat in O. Africano. Testa postice vix ac ne vix quidem emarginata, sed margine undique crasso circumdata; variat labro dentato.

1190. *RETICULATA*. 408. V. testa ovata decussatim subsulcata, labro interne striato, columella subperforata. *Argouv. conch. t.* 20. *f.* M. Habitat . . . Testa magnitudine pruni, albo luteoque varia, ovata,

oblongiuscula, sulcis obsoletis longitudinalibus transversalibusque striata. Apertura alba, effusa, labro interius transversim sulcato. Columella plicis aliquot geminatis. Cauda brevis, subperforata.

1190. MERCATORIA. 409. V. testa emarginata ovata striata, spira obtusata, columella retusa dentata, labro gibbo denticulato. *Pet. gaz. t. 9. f. 4.*—*Gualt. test. t. 43. f. L.* Habitat in M. Mediterraneo. Simillima insequenti, a qua differt, quod crassior, brevior, nitidius colorata albo luteoque, sæpe etiam cingulo ferrugineo articulado notata, sed imprimis, quod transversim striata, striis elevatis subtuberculatis.

1190. RUSTICA. 410. V. testa emarginata ovata læviuscula, spira prominula, columella retusa denticulata, labro gibbo denticulato. *Gualt. test. t. 43. f. G, H.*—*Adans. seneg. 1. t. 9. f. 28.* Habitat in M. Mediterraneo, Africano. Differt a præcedente quod non striata; convenit columella planiuscula utrinque denticulata et labro introrsum gibbo; ludit coloribus variis, sed tristioribus.

1190. PAUPERCULA. 411. V. testa integra ovata læviuscula basi striata, spira prominula, columella quadriplicata, labro obtusato. *Bonan. recr. 3. t. 50.*—*Gualt. test. t. 54. f. L.* Habitat in M. Mediterraneo. Testa ferruginea, nigra lineis albis, longitudinalibus, subrepandis. Statura duarum præcedentium.

1191. MENDICARIA. 412. V. testa subemarginata ovata substriata, spira subgranulata, columella lævi, labro gibbo denticulato. *Bonan. recr. 3. t. 50.*—*Pet. gaz. t. 11. f. 5.*—*Gualt. test. t. 52. f. E.* Habitat in Asia. Testa magnitudine seminis Phaseoli, atra, obsolete scabra. Anfractus ventris fasciis 3 flavis. Spira linea unica adscendente anfractibus subnodosis; neque columella neque labrum dentatum est.

1191. CANCELLATA. 413. V. testa integra ovata plicata decussatim reticulata, columella triplicata subumbiculata productiuscula. *Syst. nat. 10. p. 751. n. 473.* *Murex scabriusculus.*—*Gualt. test. t. 48. f. B, C, D, E.*—*Adans. seneg. 1. t. 8. f. 16.*—*Seb. mus. 3. t. 49. f. 45, 46, 48.* Habitat in O. Africano. Testa magnitudine nucis Coryli, cancellata rugis longitudinalibus striisque transversis, elevatis, acutis. Color albus ventris fasciis 2 ferrugineis. Spira acuta. Apertura alba. Columellæ cauda brevis, subperforata. Affinitas summa Muricis ob suturas rarius occurrentes, membranaceas, et labrum intus canaliculatum cum obsoletis dentibus; simillima Murici senticoso, sed brevior.

\*\*\*\*\* *Fusiformes.*

1191. TRINGA. 414. V. testa integriuscula oblonga lævi, spira prominente detrita, columella triplicata, labro introrsum subdentato. *Gualt. test. t. 43. f. B.*—*Adans. seneg. 1. t. 9. f. 27.* Habitat in M. Mediterraneo. Testa nitida, lutea, albo-nebulosa. Spiræ mucro in omnibus, quotquot vidi, detritus. Labrum exterius minime marginatum, in medio vero introrsum gibbum, sed minus quam in præcedentibus.

1191. CORNICULA. 415. V. testa subemarginata oblonga lævi cor-

nea, spira longiusecula, columella quadriplicata, labro æquali mutico. *Gualt. test. t. 43. f. N.* Habitat in Mari Mediterraneo. Similis antecedenti, sed spira magis elongata; testa tota colore cornu; labrum minime dentatum aut incrassatum; variat colore totius atro.

1192. VIRGO. 416. V. testa integra turrata plicata transverseque striata, columella triplicata perforata. Habitat . . . *Sprengler*. Testa longitudine pollicis, supplicata sulcis circiter 12, transversim striata et basi reticulata, anfractibus 10 bifasciatis inferne albo, superne luteo; linea sanguinea distinguit anfractus et fere fascias. Cauda producta fere Strombi et perforata.

1192. SCABRICULA. 417. V. testa emarginata fusiformi striata transversim rugosa, columella quadriplicata perforata, labro crenulato. *Syst. nat. 10. p. 740. n. 412. Buccinum scabriusculum.—Gualt. test. t. 53. f. D. vel t. 48. f. o.* Habitat in India orientali.

1192. RUFFINA. 418. V. testa integriuscula fusiformi transversim rugosa, columella quadriplicata, labro crenulato. *Gualt. test. t. 54. f. G.* Habitat in India Orientali. Similis V. scabriusculæ, sed angustior, longior, passim incarnato-maculata. Cauda integra absque umbilico. Labrum recurvum, crenulatum tuberculis rotundatis.

1192. SANGUISUGA. 419. V. testa emarginata fusiformi longitudinaliter sulcata transverse striata, columella quadriplicata, labro lævi. *Pet. gaz. t. 4. f. 5.—Rumph. mus. t. 29. f. V. Turricula granulata.—Gualt. test. t. 53. f. F.—Regenf. conch. 12. t. 1. f. 5.—Seb. mus. 3. t. 49. f. 11, 12.* Habitat in M. Mediterraneo. Fasciæ anfractuum e punctis sanguineis distantibus.

1192. CAFFRA. 420. V. testa emarginata fusiformi tereti lævi: spiræ anfractibus plicato-striatis, columella subquadriplicata. *M. L. U. 595. n. 234.\*—Gualt. test. t. 53. f. 2.—Seb. mus. 3. t. 49. f. 21, 22.* Habitat in O. Asiatico. Variat colore atro, violaceo, flavo, fasciis albidis cincto. Variat etiam ventre subplicato, obsoleto.

1193. MORIO. 421. V. testa subemarginata fusiformi tereti lævi, columella triplicata. *Seb. mus. 3. t. 49. f. 21, 22.* Habitat . . . *D. Sprengler*. Simillima V. caffræ, ut nota una nequeant non et altera dignosci: hæc colore eodem fusco, ventre subtus cincto unica linea alba, qua etiam destituuntur spiræ anfractus. Corpus testæ duplo crassius, nec spira striatum. Columella absque omni labio interiore et dentibus s. plicis tantum 3, iisque parvis.

1193. VULPECULA. 422. V. testa emarginata fusiformi subangulata inermi transversim striata, columella quadriplicata, fauce striata. *M. L. U. 595. n. 235.\*—Rumph. mus. t. 29. f. R. Turricula.—Gualt. test. t. 54. f. B, C.—Pet. gaz. t. 56. f. 1.—Argenv. conch. t. 12. f. V.* Habitat in O. Asiatico.

1193. PLICARIA. 423. V. testa emarginata fusiformi angulata, angulis anticis subspinosi, columella quadriplicata, labro lævi. *M. L. U.*

596. n. 236.\*—*Bonan. recr. 3. t. 65.*—*Rumph. mus. t. 29. f. S.* *Turricula plicata.*—*Gualt. test. t. 54. f. F.*—*Argenv. conch. t. 12. f. Q.*—*Seb. mus. 3. t. 49. f. 23, 24.* Habitat in O. Asiatico.

1193. PERTUSA. 424. V. testa emarginata fusiformi striata punctis pertusis, labro denticulato, columella quintuplicata. *M. L. U. 596. n. 237.\**—*Gualt. test. t. 54. f. H.*—*Seb. mus. 3. t. 50. f. 28, 47, 48.* Habitat . . .

1193. MITRA. 425. V. testa emarginata fusiformi lævi, labro denticulato, columella quadriplicata. *M. L. U. 598. n. 237.\**

*episcopal. Bonan. recr. 3. f. 120.*—*Rumph. mus. t. 29. f. K.* *Mitra episcopi.*—*Gualt. test. t. 53. f. G.*—*Argenv. conch. t. 12. f. G.* *Mitra.*—*Regenf. conch. 12. t. 5. f. 33.*

*papalis. 426. List. conch. t. 839. f. 67.* *Buccinum dentatum.*—*Bonan. recr. 3. t. 119.* *Turbo thiara.*—*Rumph. mus. t. 29. f. I.* *Mitra papalis.*—*Gualt. test. t. 53. f. I, L.*—*Argenv. conch. t. 12. f. E.* *Thiara.*—*Regenf. conch. t. 1. f. 1.*—*Seb. mus. 3. t. 51. f. 1-5, 37.*

Habitat in O. Asiatico. Instrumento venenato tangentem et carnes edentem lædit. *R.*

1194. MUSICA. 427. V. testa marginata fusiformi, anfractibus spinis obtusis, columella octoplicata, labro lævi crassiusculo. *M. L. U. 597. n. 239.\**—*Bonan. recr. 3. t. 296, 297.*—*Olear. mus. t. 30. f. 4, 7.*—*Seb. mus. 3. t. 5. f. 7-19.*—*Gualt. test. t. 28. f. X, Z.*—*Argenv. conch. t. 17. f. F.* *Papyrus musica.* Habitat in O. Americæ ad Jamaicam, Barbados.

1194. VESPERTILIO. 428. V. testa emarginata fusiformi, anfractibus spinis acutis, columella quadriplicata, labio lævi. *M. L. U. 598. n. 240.\**—*Bonan. recr. 3. t. 294.*—*Rumph. mus. t. 32. f. H.* *Vespertilio.*—*Gualt. test. t. 28. f. G.*—*Rond. test. 78.* *Murex caracoides.*—*Seb. mus. 3. t. 57. f. 5, et t. 67. f. 13-25.* Habitat in O. utriusque Indiæ.

1194. EBRÆA. 429. V. testa emarginata fusiformi, anfractibus spinis subacutis, columella plicis quinque validioribus tribusque obsoletis. *Bonan. recr. 3. t. 293.*—*Rumph. mus. t. 32. f. I.*—*Gualt. test. t. 28. f. I, M, V, G, F.*—*Argenv. conch. t. 17. f. D.* *Lignum venosum.*—*Seb. mus. 3. t. 57. f. 1-6, et 64. f. 5, 6.* Habitat in O. Asiatico. Labrum læve est.

1195. TURBINELLUS. 430. V. testa integriuscula turbinata spinis conicis erectiusculis: superioribus majoribus, columella quadriplicata. *M. L. U. 634. n. 307.\** *Murex turbinellus.*—*Bonan. recr. 3. t. 373.*—*Rumph. mus. t. 24. f. B.* *Ferrucosa secunda.*—*Gualt. test. t. 26. f. L.*—*Argenv. conch. t. 17. f. P.*—*Seb. mus. t. 49. f. 76, 77, et t. 60. f. 8.*—*Regenf. conch. 8. t. 2. f. 18.* Habitat in O. Asiatico ad Nussaan.

1195. CAPITELLUM. 431. V. obovata rugosa nodosa, columella quadriplicata. *M. L. U. 633. n. 306.\** *Murex capitellum.*—*Argenv. conch. t. 18. f. K.* Habitat in O. Indico. Alba, simillima Murici truncato.



1195. CERAMICA. 432. V. testa ovata acuta spinis divergentibus, columella subquinqueplicata. *M. L. U.* 634. n. 286.\* *Murex capitellum*.—*Bonan. recr.* 3. t. 368.—*Rumph. mus.* t. 24. f. A, et t. 49. f. L. *Verrucosa ceramica*.—*Gualt. test.* t. 55. f. D.—*Argenv. conch.* t. 18. f. E. Habitat in O. Asiæ ad Ceram. Similis V. Turbinello, sed elongatus.

1195. PYRUM. 433. V. testa obovata subcaudata, spiræ anfractibus striatis, apice producto glaberrimo, columella triplicata. *Rumph. mus.* t. 36. f. 7.—*Gualt. test.* t. 46. f. C. Habitat in Tranquebar. *Sprengler*. Testa pyriformis, undulatim striata, pallido-punctato-fasciata. Apex cylindricus, basi angulatus, glaberrimus, obtusus. Cauda exserta, patula, integra.

1195. LAPPONICA. 434. V. testa obovata lævi, spira acuminata, ventre dilatato. *Rumph. mus.* t. 37. f. 3. *Murex lapponicus*.—*Seb. mus.* 3. t. 57. f. 25, 26. Habitat in O. Americano.

\*\*\*\*\* *Ventricosæ.*

1195. ÆTHIOPICA. 435. V. testa emarginata ventricosa, spira coronata spinis fornicatis, apice papillari, columella quadriplicata. *M. L. U.* 598. n. 241.\*—*Bonan. recr.* 3. t. 1. *Latina*.—*Rumph. mus.* t. 31. f. A, B.—*Gualt. test.* t. 29. f. H, I.—*Seb. mus.* 3. t. 65. f. 2, 4, 10-12, et t. 66. f. 8, 9, 10, 6, 7, 3, 15.—*Argenv. conch.* t. 20. f. F. *Corona æthiopica*.—Habitat in M. Persico et Key Asiæ. Umbilicus absque papilla. Fasciæ 2 ferrugineæ interruptæ.

1196. CYMBIUM. 436. V. testa emarginata ventricosa, spira anfractibus canaliculato-marginatis, apice papillari, columella biplicata. *M. L. U.* 599. n. 242.\*—*Column. purp.* 29. t. 30. f. 3. *Cochlea altera magna*.—*Bonan. recr.* 3. t. 6.—*Gualt. test.* t. 29. f. B.—*Seb. mus.* 3. t. 65. f. 5, 6, et t. 66. f. 5, 18.—*Adans. seneg.* 1. t. 3. f. 2. Habitat in M. Iberico.

1196. OLLA. 437. V. testa emarginata ventricosa, spira lævigata, apice papillari, columella quadriplicata. *M. L. U.* 599. n. 243.\*—*Aldr. exs.* 560. *Concha persica*.—*Column. aqu.* t. 69. f. 4, 6.—*List. conch.* t. 794. f. 1.—*Bonan. recr.* 3. t. 2.—*Gualt. test.* t. 29. f. A.—*Argenv. conch.* t. 20. f. G.—*Klein. ostr.* t. 5. f. 97.—*Adans. seneg.* t. 3. f. 1. Habitat in Philippinis Asiæ.

323. BUCCINUM. Animal Limax. Testa univalvis, spiralis, gibbosa. Apertura ovata, desinens in canaliculum (s. retusam lacunam) dextrum, cauda retusum. Labium interius, explanatum.

\*a\* *Ampullacea, inflata, rotundata, tenui-subdiaphana, fragilis.*

1196. OLEARIUM. 438. B. testa subrotunda cincta sulcis obtusis: lincolæ elevata interstinctis, apertura edentula. *Pet. gaz.* t. 99. f. 11.

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VOLUTE genus facillime distinguitur columella plicata.

—*Rumph. mus. t. 27. f. D?*—*Gualt. test. t. 44. f. T.* Habitat in O. Indico.

1197. GALEA. 439. B. testa obovata inflata cincta sulcis antice geminatis, apertura edentula. *Bonan. recr. 3. t. 183.*—*Gualt. test. t. 42. f. A.* Habitat in M. Mediterraneo. Testa magnitudine sæpe capitis humani.

1197. PERDIX. 440. B. testa ovata inflata subsulcata alboque undulata, apertura edentula. *M. L. U. 600. n. 244.\**—*Column. aqu. t. 69. f. 5.* *Cassida neritoides minor variegata.*—*Bonan. recr. 3. t. 191.*—*List. conch. t. 899. f. 19.*—*Rumph. mus. t. 27. f. C.* *Cochlea pennata.*—*Gualt. test. t. 51. f. F.*—*Argenv. conch. t. 20. f. A.* *Perdix.*—*Adans. seneg. 1. t. 7. f. 5.*—*Seb. mus. 3. t. 68. f. 16.* Habitat ad Americam.

1197. POMUM. 441. B. testa ovata cincta sulcis obtusis, apertura dentata. *M. L. U. 600. n. 245.\**—*Barrel. icon. 1325. f. 12.*—*Rumph. mus. t. 27. f. B.* *Cochlea striata altera.*—*Gualt. test. t. 51. f. C.*—*Argenv. conch. t. 20. f. L.* Habitat ad Javam. Anfractus albi, cingulis 12 s. 14 elevatis lutescentibus. Spiræ summus apex nitidus.

1197. DOLIUM. 442. B. testa ovata cincta sulcis obtusis remotis, cauda prominula. *M. L. U. 601. n. 246.\**—*Rond. test. 106.* *Cochlea rugosa.*—*Rumph. mus. t. 27. f. A.* *Cochlea striata s. olearia.*—*Calceol. mus. 30. t. 41.*—*Bonan. recr. 3. t. 17, 25.*—*Gualt. test. t. 89. f. E.*—*Argenv. conch. t. 20. f. C.*—*List. conch. t. 899. f. 19.*—*Seb. mus. 3. t. 70. f. 1-4, et t. 68. f. 9.*—*Adans. seneg. 1. t. 7. f. 6.* Habitat in M. Siculo, Africano.

\*b\* *Cassidea, caudata*: cauda exserta brevi reflexa; labro extrorsum inermi.

1198. ECHINOPHORUM. 443. B. testa cingulis quatuor tuberculis, cauda prominente. *M. L. U. 601. n. 247.\**—*Bonan. recr. 3. t. 19, 18.*—*Rumph. mus. t. 27. f. 1.*—*Argenv. conch. t. 20. f. P.*—*Ginan. adr. 2. t. 5. f. 43.*—*Seb. mus. 3. t. 68. f. 18.* Habitat in M. Mediterraneo.

1198. PLICATUM. 444. B. testa antice subplicata decussatim substriata, apertura dentata, cauda recurva.—*Bonan. recr. 3. t. 156.*—*Gualt. test. t. 40. f. C.*—*Argenv. conch. t. 18. f. D?* *Cassis.*—*Seb. mus. 3. t. 73. f. 10.* Habitat ad Jamaicam.

1198. CORNUTUM. 445. B. testa turbinata scrobiculis punctata coronata, apertura dentata, cauda recurva. *M. L. U. 602. n. 249.\**—*Rond. test. 2. 77.* *Murex triangularis.*—*Bonan. recr. 3. t. 155.*—*Rumph. mus. t. 23. f. 1.*—*Gualt. test. t. 40. f. D.*—*Seb. mus. 3. t. 73. f. 7, 8, 17, 18.* Habitat in America.

1198. RUFUM. 446. B. testa decussatim striata: cingulis nodosis interstinctis linea gemina, apertura dentata, cauda recurva. *M. L. U. 603. n. 250.\**—*Rumph. mus. t. 23. f. B.* *Cassida rubra.*—*Barrel. rar. 1325. f. 29.*—*Gualt. test. t. 40. f. F.*—*Regenf. conch. t. 12. f. 69.*—*Seb. mus. 3. t. 73. f. 2-6, 9.* Habitat in O. Americano.

1198. TUBEROSUM. 447. B. testa cingulis duobus tuberculis, cauda recurva. *M. L. U.* 602. n. 249.\*—*Labat. itin.* 5. p. 262.—*Gualt. test. t.* 41. Habitat in O. Americano.

1199. FLAMMEUM. 448. B. testa subplicata subcoronata, apertura dentata, cauda recurva. *M. L. U.* 603. n. 251.\*—*Bonan. recr.* 3. t. 161.—*Rumph. mus. t.* 23. f. 2. Habitat . . .

1199. TESTICULUS. 449. B. testa obovata decussatim striata lævigata, striis elevatis longitudinalibus, apertura dentata, cauda recurva. *M. L. U.* 604. n. 252.\*—*Bonan. recr.* 3. t. 162.—*Rumph. mus. t.* 23. f. 3.—*Gualt. test. t.* 39. f. C.—*Seb. mus.* 3. t. 72. f. 17–20, et t. 73. f. 19, 20. Habitat ad Jamaicam. Labium interius oblitteratum et fere nullum.

1199. DECUSSATUM. 450. B. testa decussatim striata lævigata squamulis quadratis, apertura dentata, cauda recurva. *M. L. U.* 604. n. 253.\*—*Rond. test.* 83. f. 1. *Buccinum parvum.*—*Bonan. recr.* 3. t. 157.—*Gualt. test. t.* 40. f. B. Habitat in O. Africano. Labium interius punctis eminentibus notatum. Labium exterius interne creatum.

1199. AREOLA. 451. B. testa substriata maculis quadratis quadri-fariam cincta, apertura dentata, cauda recurva. *M. L. U.* 605. n. 254.\*—*Bonan. recr.* 3. t. 154.—*Rumph. mus. t.* 25. f. 1. B. 2. *Areola.*—*Gualt. test. t.* 39. f. H, G.—*Argenv. conch. t.* 18. f. I.—*Klein. ostr. t.* 6. f. 102.—*Seb. mus.* 3. t. 70. f. 7–9. Habitat in M. Mediterraneo, Java. Alia striata est, alia lævis. Labium exterius interiori margine dentatum est.

\*c\* *Cassidea, unguiculata*: labro postice extrorsum aculeato; cæterum similia caudatis b.

1199. ERINACEUS. 452. B. testa subplicata papillis coronata, labro postico muricato. *M. L. U.* 605. n. 255.\*—*Rumph. mus. t.* 25. f. 7.—*Gualt. test. t.* 39. f. I, D.—*Argenv. conch. t.* 17. f. G.—*Seb. mus.* 3. t. 53. f. 11–16. Habitat in O. Americano, Alexandria.

1200. GLAUCUM. 453. B. testa lævi papillisque coronata, labro postice muricato. *M. L. U.* 606. n. 256.\*—*Rumph. mus. t.* 25. f. A. *Cassis cinerea lævis.*—*Gualt. test. t.* 40. f. A.—*Seb. mus.* 3. t. 71. f. 11, 12, 14, 16. Habitat in O. Asiatico.

1200. VIBEX. 454. B. testa lævi tota, labro postice muricato. *M. L. U.* 606. n. 257.\*—*Bonan. recr.* 3. t. 152.—*Rumph. mus. t.* 25. f. E. 8, 9. *Fimbriata lævis.*—*Gualt. test. t.* 39. f. L, F.—*Argenv. conch. t.* 17. f. H.—*Seb. mus.* 3. t. 53. f. 3–7.—*Regenf. conch. t.* 10. f. 40. Habitat ad Jamaicam, Alexandria.

1200. PAPILLOSUM. 455. B. testa undique tuberculata, labro postice muricato. *M. L. U.* 607. n. 258.\*—*Rumph. mus. t.* 29. f. M. *Buccinum granulatum rotundum.*—*Argenv. conch. t.* 12. f. I.—*Seb. mus.* 3. t. 49. f. 57, 58, 59. Habitat in O. Asiatico.

1200. GLANS. 456. B. testa lævi, labro postice muricato, labioque interiore bidentato. *M. L. U.* 607. n. 259.\*—*Rumph. mus. t.* 29. f. P.—*Seb. mus. 3. t.* 39. f. 56, 57, 60. Habitat in O. Asiatico.

\*d\* *Callosa: columellæ labio dilatato incrassato.*

1200. ARCULARIA. 457. B. testa plicata papillisque coronata, labio interiore explanato gibbo. *M. L. U.* 608. n. 260.\*—*Rumph. mus. t.* 27. f. M. *Arcularia major.*—*Gualt. test. t.* 44. f. R, O.—*Argenv. conch. t.* 17. f. C.—*Seb. mus. 3. t.* 53. f. 32, 33. Habitat ad Javam.

1201. PULLUS. 458. B. testa gibba oblique striata, labio interiore explanato gibbo. *List. conch. t.* 970. f. 25, 26.—*Gualt. test. t.* 44. f. M, N.—*Adans. seneg. 1. t.* 8. f. 11. Habitat in M. Mediterraneo. Præcedenti dimidio minor, ferruginea, striis longitudinalibus, sed obliquis et fascia transversa alba.

1201. GIBBOSULUM. 459. B. testa gibba lævi, labio interiore explanato gibbo. *Gualt. test. t.* 44. f. L.—*Seb. mus. 3. t.* 53. f. 46. Habitat in M. Mediterraneo.

1201. MUTABILE. 460. B. testa lævi: adultiore rugosa, spira exserta, labio interiore subexplanato. *Gualt. test. t.* 44. f. B. Habitat in M. Mediterraneo. Testa tenera, lævis, pallida, anfractibus margine superiore obsolete albis rufisque. Spira exquisita anfractibus distinctissimis, longitudine testæ. Adultior vero longitudinaliter rugosa evadit, cinerea, opaca; labium interius antice extenditur crassiusculum.

1201. NERITEUM. 461. B. testa convexa obtusa lævi, labio interiore explanato gibbo obsoleto. *Gualt. test. t.* 65. f. C, I. Habitat in M. Mediterraneo. Testa magnitudine pisi, facie Neritæ, fere orbiculata, convexa, obtusa, lævis, pallida, sutura superiore secundum anfractus linea purpurascente vermiculari. Sultus planiuscula, alba, gibbosa. Apertura postice emarginata, unde a Neritis diversa.

\*e\* *Detrita, columellæ labium quasi abrasum, planum.*

1201. HARPA. 462. B. testa varicibus æqualibus longitudinalibus distinctis mucronatis, columella lævigata. *M. L. U.* 609. n. 261.\*—*Bonan. recr. 3. t.* 185.—*List. conch. t.* 992. f. 55.—*Pet. gaz. t.* 48. f. 13.—*Rumph. mus. t.* 32. f. K, L, M. *Harpa.*—*Gualt. test. t.* 29. f. C, D, E, G.—*Argenv. conch. t.* 20. f. D. *Harpa nobilis.*—*Regenf. conch. t.* 2. f. 14.—*Klein. ostr. t.* 6. f. 105.—*Seb. mus. 3. t.* 70. f. 10. Habitat ad Benghala.

1202. COSTATUM. 463. B. testa varicibus æqualibus longitudinalibus confertis mucronatis, columella lævigata. Habitat . . . Simillima præcedenti, forte varietas, sed costæ approximatae.

1202. PERSICUM. 464. B. testa scabra, labro crenulato, columella plana. *M. L. U.* 609. n. 262.\*—*Grew mus. t.* 9. f. 5, 6.—*Rumph. mus. t.* 27. f. F. *Cochlea patula.*—*Gualt. test. t.* 51. f. L.—*Argenv.*

*conch. t. 20. f. E. Concha persica.*—*Seb. mus. 3. t. 72. f. 10–16.* Habitat in O. Asiatico.

1202. PATULUM. 465. B. testa muricata, labro extus crenato, columella falcata. *M. L. U. 610. n. 263.\*—Gualt. test. t. 51. f. D, E.*—*Argenv. conch. t. 20. f. II. Morun.*—*Bonan. recr. 3. t. 368.*—*List. conch. t. 989. f. 49.*—*Adans. seneg. 1. t. 7. f. 3.* Habitat in America. Affinis Neritæ nodosæ, sed cujus apertura postice sinu exit; Neritæ vero non. Anfractus ventris cingulo triplici nodoso acuto et duplici inferiore obtusiore.

1202. HÆMASTOMA. 466. B. testa submuricata, labro intus striato, columella planiuscula, fauce fulva. *Gualt. test. t. 51. f. A.* Habitat in O. Europæo. Testa ovata, rudis, cincta duplici fascia nodosa anfractuum. Faux crocea, labrum intus crenulatum et striatum.

1202. LAPILLUS. 467. B. testa ovata acuta striata lævi, columella planiuscula. *Fn. suec. 2167.*—*Act. paris. 1711. p. 199. t. 6. f. 5, 7.*—*Adans. seneg. 1. t. 7. f. 4.*—*List. angl. 158. t. 3. f. 5, 6.* Habitat ad Oceani Europæi littora. Turbini laterali convenit facie, loco, magnitudine, consistentia. Purpura aliqua ex hoc elicitur; vide Ström. sondm. 188.

1203. SMARAGDULUS. 468. B. testa ovata acuta glaberrima, columella subplicata planiuscula. *M. L. U. 670. n. 264.\*—Argenv. conch. t. 9. f. P.* *Smaragdus minor.*—*Seb. mus. 3. t. 54. f. 14, 15, 16.* Habitat . . .

\*f\* *Lævigata (nec præcedentia).*

1203. SPIRATUM. 469. B. testa lævi, anfractibus canali plano distinctis, columella abrupta perforata. *M. L. U. 611. n. 265.\*—Column. purp. 15. t. 16. f. 2.*—*Bonan. recr. 3. t. 370, et 70.*—*Rumph. mus. t. 49. f. C, D.*—*Gualt. test. t. 51. f. H.*—*Argenv. conch. t. 20. f. N.* *Contabulata.*—*Regenf. conch. t. 10. f. 41.*—*Seb. mus. 3. t. 73. f. 21–26.* Habitat in M. Mediterraneo. Variat anfractu suturæ l. rotundato l. plano.

1203. GLABRATUM. 470. B. testa glaberrima, anfractibus obsoletis: infimo basi subcanaliculato producto. *M. L. U. 611. n. 266.\*—Bonan. recr. 3. t. 149, male.*—*List. conch. t. 982.*—*Gualt. test. t. 43. f. T.*—*Argenv. conch. t. 12. f. G. prior.*—*Klein. ostr. 37. t. 2. f. 47.* *Dipsacus.* Habitat in O. Americano, Tranquebar. Testa quasi butyro s. oleo inuncta flava. Columella subperforata.

1203. PRÆROSUM. 471. B. testa ovata lævi atra, spira cariosa, columella glaberrima. Habitat in Europa australiore, ad aquæductum Sevillæ. *Alström.* Testa magnitudine fere fabæ, tota atra, rudis; vertex cariosus erosus et quasi præmorsus.

\* *Angulata (nec antea dicta).*

1203. UNDOSUM. 472. B. testa ovata: striis transversis elevatis glabris, ventre obtuse quinquangulari, labro intus striato. *M. L. U.*

612. n. 268.\*—*Rumph. mus. t. 29. f. O.* *Buccinum undosum*.—*Argenv. conch. t. 12. f. N.*—*Klein. ostr. t. 3. f. 61.*—*Seb. mus. 3. t. 52. f. 26.* Habitat in Asia.

1204. BEZOAR. 473. B. testa subrotunda rugosa, anfractibus antice lamellatis, columella perforata. *Argenv. conch. t. 18. f. G.* Habitat . . . *Tesdorff*. Testa magnitudine pomi, rudis, decussatim rugosa s. striata, postice perforata. Anfractus ventris antice imbricati lamellis exstantibus, undulatis, numerosissimis. Spira angulata lateribus rectis, antice planiuscula, plicata aut superne dentata. Maxime affine Murici.

1204. GLACIALE. 474. B. testa lævi substriata ovato-oblonga, anfractu infimo subcarinato. *Fn. suec. 2162.\** Habitat in O. septentrionali ad Spitzbergam insulam.

1204. UNDATUM. 475. B. testa oblonga rudi transversim striata: anfractibus curvato-multangulis. *Fn. suec. 2263.\**—*Bonan. recr. 3. t. 189, 190.*—*List. angl. 156. t. 3. f. 2.*—*Seb. mus. 3. t. 39. f. 78, 79, 80.* Habitat in O. Europæo. Simillimum Murici antiquo et despecto, æque rude. Ovarium Ellis corall. 32. f. B. b.; Vesicaria marina vulgo.

1204. RETICULATUM. 476. B. testa ovato-oblonga transversim striata longitudinaliter rugosa, apertura dentata. *Gualt. test. t. 44. f. G, C, E.*—*Bonan. recr. 3. t. 62.*—*List. conch. t. 966. f. 21.*—*Pet. gaz. t. 64. f. 8, et t. 75. f. 4.*—*Act. paris. 1710. p. 463, et 1711. p. 199. t. 6. f. 9.*—*Adans. seneg. 1. t. 8. f. 9.* Habitat in M. Mediterraneo. Testa omnibus facile coloribus varians, magnitudine Avelanæ. (Animal inhabitans Tritonem esse retulit *D. D. Köhler*.)

1205. NITIDULUM. 477. B. testa ovato-oblonga nitida fasciata longitudinaliter striato-rugosa, labro intus subdentato. *Gualt. test. t. 52. f. C.* Habitat in M. Mediterraneo. Testa variat admodum colore et fasciis; sæpe cingulo nigro circumdata. Columella labio minime replicato.

1205. LÆVIGATUM. 478. B. testa ovato-oblonga nitida fusco-striata lævi, apertura edentula unilabiata. *Gualt. test. t. 52. f. B.* Habitat in M. Mediterraneo. Testa præcedenti simillima, pallida, obsolete maculata striis obscurioribus, sed differt apertura minime dentata et columella absque labio; spiræ etiam minime plicatæ sunt.

\*g\* *Turrita: lævia, subulata.*

1205. MACULATUM. 479. B. testa turrita subfusiformi, anfractibus lævibus indivisis integerrimis. *M. L. U. 613. n. 269.\**—*Bonan. recr. 3. t. 317.*—*Rumph. mus. t. 30. f. A, D.* *Strombus 1, 2, 3.*—*Gualt. test. t. 56. f. I.*—*Argenv. conch. t. 14. f. A.*—*Seb. mus. 3. t. 56. f. 6.* Habitat in O. Africæ, Asiæ. Testa flavescens maculis purpurascens.

1205. SUBULATUM. 480. B. testa turrita subulata lævi indivisa integerrima. *Bonan. recr. 3. t. 118.*—*Rumph. mus. t. 30. f. B.*—*Gualt. test. t. 56. f. B.*—*Argenv. conch. t. 14. f. X.*—*Seb. mus. 3. t. 56. f. 11,*

16. Habitat in Indiis. Pallida maculis ferrugineis in singulo anfractu per paria adscendentibus; differt a *B. maculato* testa minime gibba.

1205. CRENULATUM. 481. *B.* testa turrita, anfractibus bifidis margine crenatis. *M. L. U.* 613. *n.* 270.\*—*Gualt. test. t.* 57. *f. L.*—*Argenv. conch. t.* 14. *f. Y.*—*Seb. mus. 3. t.* 56. *f.* 35. Habitat in O. Africano.

1206. HECTICUM. 482. *B.* testa turrita, anfractibus bifidis margine superiore compresso-attenuato. *Gualt. test. t.* 56. *f. C.*—*Seb. mus. 3. t.* 56. *f.* 21. Habitat in O. Africano.

1206. VITTATUM. 483. *B.* testa turrita substriata, sutura anfractuum duplici crenulata. *Klein. ostr. t.* 7. *f.* 121. Habitat . . . *J. Zoega.* Testa ex ovato turrita, albida, remote transversaliter striata. Sutura duplicata, vix triplicata, articulato-crenata, anfractus distinguens.

1206. STRIGILATUM. 484. *B.* testa turrita, anfractibus bifidis oblique striatis. *M. L. U.* 614. *n.* 271.\*—*Rumph. mus. t.* 30. *f. H.* *Strombus 9, granulatus.*—*Bonan. recr. 3. t.* 110.—*Gualt. test. t.* 57. *f. O.*—*Argenv. conch. t.* 14. *f. R.* Habitat in O. Asiatico.

1206. DUPLICATUM. 485. *B.* testa turrita, anfractibus bipartitis striatis. *M. L. U.* 614. *n.* 272.\*—*Bonan. recr. 3. t.* 110.—*Gualt. test. t.* 57. *f. N.* Habitat in O. Indico.

1206. LANCEATUM. 486. *B.* testa turrita lævi, anfractibus integris lineis longitudinalibus testaceis. *Rumph. mus. t.* 30. *f. G.*—*Argenv. conch. t.* 14. *f. Z.* Habitat in India. Testa apice lævissime striata. Cauda vix retusa.

1206. DIMIDIATUM. 487. *B.* testa turrita, anfractibus bifidis lævibus. *Seb. mus. 3. t.* 56. *f.* 16, 19, 23, 24, 27. Habitat in O. Africano.

1206. MURINUM. 488. *B.* testa turrita, anfractibus subangulatis, striis tribus muricatis. *Gualt. test. t.* 57. *f. P.* Habitat ad Africam. Testa nigra, basi gibba, anfractibus sæpe basi albis.

324. STROMBUS. Animal Limax. Testa univalvis, spiralis, latere ampliata. Apertura, labro sæpius dilatato, desinens in canalem sinistrum.

\* *Digitati, labio in lacinias lineares exeunte.*

1207. FUSUS. 489. *S.* testa turrita lævi, cauda subulata, labro dentato. *M. L. U.* 638. *n.* 316. *Murex Fusus.*—*Bonan. recr. 3. t.* 121. *Argenv. conch. t.* 13. *f. D.* *Fusum.*—*Klein. ostr. t.* 4. *f.* 77.—*Seb. mus. 3. t.* 56. *f.* 1, 2, 3. Habitat in America, rarior. Genus hujus difficile determinatur. Testa lævi a muricibus omnino differt; cauda magis recta a Strombis aliquatenus recedit, sed labro dentato convenit.

1207. PES-PELECANI. 490. *S.* testæ labro tetradactylo palmato digitis angulato, fauce lævi. *Fu. succ.* 2164.\*—*M. L. U.* 615. *n.* 273.\*—*Rond. test. 92. f.* 1, 2.—*Bonan. recr. 3. t.* 85, 86, 87.—*List. conch.*

*t.* 866. *f. min.*—*Gualt. test. t.* 53. *f. B, C, A.*—*Argenv. conch. t.* 17. *f. M.*—*Seb. mus. 3. t.* 62. *f. 17.*—*Ginan. adr. 2. t.* 7. *f. 58–60.* Habitat in O. Europæo, Norvegico, Mediterraneo, Americano.

1207. CHIRAGRA. 491. S. testæ labro hexadactylo, digitis curvis, cauda recurvata. *M. L. U.* 615. *n.* 274.\*—*Bellon. aqu. 422.*—*Barrel. rar. 1327. f. I.*—*Bonan. recr. 3. t.* 312.—*Rumph. mus. t.* 35. *f. A, B.* *Harpago.*—*Seb. mus. 3. t.* 83. *f. 1, 2.*—*Gualt. test. t.* 35. *f. B, A, et t.* 36. *f. B.* Habitat ad Bandam Asiæ. Digiti antrorsum incurvati, subtus sutura coaliti. Labium subtus antice distinctum rima; inter digitos posteriores ad caudam hians. Faux sanguinolenta, in labio inferiore substriata.

1208. SCORPIUS. 492. S. testæ labro heptadactylo, digitis nodosis: postico longissimo. *M. L. U.* 616. *n.* 275.\*—*Rumph. mus. t.* 36. *f. K.* *Cornuta nodosa.*—*Gualt. test. t.* 36. *f. C.*—*Argenv. conch. t.* 17. *f. B.* *Scorpio.* Habitat in O. Asiatico. Faux violacea, striata.

1208. LAMBIS. 493. S. testæ labro heptadactylo: digitis rectiusculis, fauce lævi. *M. L. U.* 617. *n.* 276.\*—*Rond. test. 79. f. 71.* *Aporrhais.*—*Barrel. rar. 1326. f. 7.*—*Bonan. recr. 3. t.* 315.—*Rumph. mus. t.* 35. *f. E, F.* *Cornuta.*—*Gualt. test. t.* 35. *f. C; t.* 36. *f. A.*—*Argenv. conch. t.* 17. *f. E.* *Lambis.*—*Regenf. conch. 16. t. 4. f. 45.* Habitat in O. Asiæ. Testa testacea albo maculata. Faux subincarnata.

1208. MILLEPEDA. 494. S. testæ labro decadactylo, digitis inflexis, fauce substriata, dorso gibbere compresso. *M. L. U.* 618. *n.* 277.\*—*Bonan. recr. 3. t.* 311.—*List. conch. t.* 868. *f. 23, et 869. f. 24.*—*Rumph. mus. t.* 36. *f. I.* *Cornuta millepeda.*—*Argenv. conch. t.* 18. *f. B.* *Millepeda.* Habitat in O. Asiæ.

\*\* *Lobati.*

1208. LENTIGINOSUS. 495. S. testæ labro antice trilobo incrassato, dorso verrucoso coronato, cauda obtusa. *M. L. U.* 619. *n.* 278.\*—*Rond. test. 91.* *Turbo auritus.*—*Bonan. recr. 3. t.* 300.—*Barrel. rar. 1326. f. 4, et 1327. f. 5.*—*Rumph. mus. t.* 37. *f. Q.* *Lentiginosa.*—*Gualt. test. t.* 32. *f. A.*—*Argenv. conch. t.* 18. *f. C.*—*Seb. mus. 3. t.* 62. *f. 11.* Habitat in O. Asiæ. Blatta Byzantina est hujus operculum; color ranæ.

1209. GALLUS. 496. S. testæ labro dilatato: antice mucronato longissimo, dorso coronato, cauda recta. *M. L. U.* 619. *n.* 279.\*—*Bonan. recr. 3. t.* 309, 310.—*Rumph. mus. t.* 37. *f. 5.* *Laphoorn.*—*Gualt. test. t.* 32. *f. M.*—*Seb. mus. 3. t.* 62. *f. 1, 2.* Habitat . . .

1209. AURIS DIANÆ. 497. S. testæ labro antice mucronato, dorso muricato, cauda crecta acuta. *M. L. U.* 620. *n.* 280.\*—*Rumph. mus. t.* 37. *f. R.* *Pugiles.*—*Gualt. test. t.* 32. *f. II.*—*Argenv. conch. t.* 17. *f. O.* *Auris Dianæ.*—*Klein. ostr. t.* 6. *f. 106.*—*Seb. mus. 3. t.* 61. *f. 1–4, et t.* 62. *f. 13.* Habitat in O. Asiæ. Labrum fauce incarnata.

1209. PUGILIS. 498. S. testæ labro antice prominente rotundato



lævi, spira spinosa, cauda triloba obtusa. *M. L. U.* 620. n. 281.\*—*List. conch. t.* 906. f. 26.—*Bonan. recr.* 3. t. 299.—*Gualt. test. t.* 32. f. B.—*Argenv. conch. t.* 18. f. A.—*Klein. ostr. t.* 6. f. 108. Habitat ad Jamaicam. Faux rubra est, testa crocea.

1209. MARGINATUS. 499. S. testæ labro prominulo, dorso marginato lævi, cauda integra. Habitat . . .

1209. LUHUANUS. 500. S. testæ labro prominulo, dorso lævi, anfractibus rotundatis æqualibus. *M. L. U.* 621. n. 282.\*—*Rumph. mus. t.* 37. f. S. *Luhua.*—*Argenv. conch. t.* 17. f. N.—*Seb. mus.* 3. t. 61. f. 20, 21, et t. 62. f. 31, 32. Habitat in O. Asiæ frequens. Faux sanguinea.

1210. GIBBERULUS. 501. S. testæ labro prominulo, dorso lævi, anfractibus gibbosis inæqualibus. *M. L. U.* 621. n. 283.\*—*Rumph. mus. t.* 37. f. V. *Canarium.*—*Bonan. recr.* 3. t. 150.—*Seb. mus.* 3. t. 61. f. 53. Habitat in O. Asiæ. Latus inferius testæ planiusculum est.

1210. ONISCUS. 502. S. testa obovata cingulis nodosis, mucrone subulato lævi. *Gualt. test. t.* 22. f. I. an?—*Seb. mus.* 3. t. 55. f. 23. a-g. Habitat . . . Testa magnitudine coryli, obovata, cingulis tribus subnodosis: nodis ordine longitudinali itidem dispositis, pallida maculis nigricantibus sparsis contaminata. Spira obtusissima cingulo solitario noduloso: apice tenuissimo albo. Apertura alba, longitudinalis, columella lævi. Labro exteriore vix repando. Cauda nulla et basis vix manifeste emarginata.

\*\*\* *Ampliati.*

1210. LUCIFER. 503. S. testæ labro antice rotundato integro, ventre dupliciter striato, spira carinata: tuberculis superioribus minutis. *Bonan. recr.* 3. t. 303, 304.—*Barrel. rar. t.* 1327. f. 7.—*Rumph. mus. t.* 49. f. M.—*Argenv. conch. t.* 17. f. I.—*Klein. ostr. t.* 4. f. 85.—*Seb. mus.* 3. t. 62. f. 38, 39. Habitat ad Americam australem. Differt a sequenti testa minus crassa, et imprimis spinis spiræ minimis, nec magnis crassis pollicaribus ut in illa. Conf. *Gualt. test. t.* 55. f. B. an hujus Larva?

1210. GIGAS. 504. S. testa labro rotundato maximo, coronata ventre spiraque spinis conicis patentibus. *Bonan. recr.* 3. t. 321, 307.—*Gualt. test. t.* 33. f. A.—*Rond. pisc.* 76. *Murex marmoreus.*—*Column. aquat. t.* 60. f. 5.—*Gesn. aquat.* 340. *Conchylum.*—*Aldr. exsang.* *Murex marmoreus.*—*List. conch. t.* 860. f. 17, 18, et t. 882. f. 4.—*Olear. mus. t.* 32. f. 5.—*β. Gualt. test.* 54. f. M. Habitat in America. Testæ color internus vividissimus.

1211. LATISSIMUS. 505. S. testa labro rotundato maximo, ventre inermi, spira subnodosa. *M. L. U.* 622. n. 284.\*—*Rumph. mus. t.* 36. f. L. *Alata lata.*—*Seb. mus.* 3. t. 63. f. 1, 2. Habitat in O. Asiæ.

1211. EPIDROMIS. 506. S. testa labro rotundato brevi, ventre

Listeri conchiliorum historiam cum tabularum numeris adpositis non obtinui, citationes ejusdem nonnullas aliorum oculis tantum vidi.

lævi, spira subnodosa. *M. L. U.* 622. n. 285.\*—*Barr. rar.* 1727. f. 2.—*Rumph. mus. t.* 36. f. *M. Epidromis.*—*Seb. mus. 3. t.* 62. f. 21. Habitat in O. Asiæ.

1211. CANARIUM. 507. S. testa subcordata, labro rotundato brevi retuso, spiraque lævi. *M. L. U.* 623. n. 287.\*—*Bonan. recr.* 3. t. 146.—*Pet. gaz. t.* 98. f. 11.—*Rumph. mus. t.* 36. f. *N.*—*Gualt. test. t.* 32. f. *N, L.*—*Argenv. conch. t.* 17. f. *Q.*—*Klein. ostr. t.* 4. f. 73.—*Seb. mus. 3. t.* 62. f. 28, 29, 24, 25. Habitat in O. Asiæ. Testa admodum gibba et quasi pinguis apparet.

1211. VITTATUS. 508. S. testa labro rotundato brevi, ventre lævi, spiræ elongatæ anfractibus sutura elevata distinctis. *M. L. U.* 623. n. 387.\*—*Rumph. mus. t.* 36. f. *O. Epidromis.*—*Argenv. conch. t.* 12. f. *F.*—*Pet. gaz. t.* 98. f. 12.—*Seb. mus. 3. t.* 62. f. 18, 19, 20, et t. 79. f. 1. Habitat in O. Asiæ. Confer *Gualt. test. t.* 33. f. *B.*—*Argenv. conch. t.* 13. f. *C.* An sola varietas? Variat testa lævi et subplicata; semper elongata.

1212. SUCCINCTUS. 509. S. testa labro rotundato retuso, ventre lævi cingulis quatuor pallidis lineari-punctatis. *Rumph. mus. t.* 37. f. *X.*—*Gualt. test. t.* 33. f. *B.*—*Argenv. conch. t.* 13. f. *C.*—*Seb. mus.* 61. f. 15, et 62. f. 20. Habitat in India. Testa lævis, testacea, dorso subcarinato cincto lineis bigeminis albo-punctatis. Spiræ anfractus striati carinula crenata. Labrum exterius intus striatum; interius adnatum, læve, gibbum, antice substriatum.

1212. SPINOSUS. 510. S. testa labro attenuato integro subplicato coronato spinis argutis, spira aculeata. *Gualt. test. t.* 55. f. *E.*—*Argenv. conch. t.* 33. f. 10.—*Pet. gaz. t.* 78. f. 11.—*Syst. nat.* 10. p. 715. n. 271. *Conus spinosus.* Habitat . . . mihi fossilis tantum. Statura *Volutæ vesperilionis*, sed basis minime emarginata, nec columella plicata. Lineolæ purpurascens, parallelæ, numerosæ cingunt testam albidam, superne angulatam et spinis acutissimis coronatam. Mirum colores perennare in fossili testa?

1212. FISSURELLA. 511. S. testa labro continuato in carinam fissam longitudinalem. *Argenv. conch. t.* 33. lin. 2. n. 6. *Mitra.*—*Pet. gaz. t.* 73. f. 7, 8. Habitat in India Orientali. Comes *Strogonow*. *J. Falk*, Profess. *Petropol.* Testa magnitudine et statura *Turbinis Clathri*, alba: anfractus costis carinatis, excepto maximo, subtus lævi. Apertura oblongiuscula. Labrum exterius parum dilatatum; interius adnatum apertura; ex his labris excurrit per latus testæ in carinam fissam longitudinalem, apice recurvatam supra testæ verticem. Cauda brevis, recta, sinu parum distincta a labro.

1212. URCEUS. 512. S. testa labro attenuato retuso brevi striato, ventre spiraque plicato-nodosis, apertura bilabiata inermi. *M. L. U.*

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*STROMBI* junioris testæ carent omni labro et turbinatæ existunt, quas ad distincta genera perperam retulere authores.

624. n. 288.\*—*Rumph. mus. t. 37. f. T. Canarium bene.*—*Petiv. gaz. t. 98. f. 19.*—*Gualt. test. t. 32. f. G.*—*Seb. mus. 3. t. 60. f. 28, 29, et t. 62. f. 45, 41, 47.* Habitat in O. Asiæ.

1213. DENTATUS. 513. S. testa labro attenuato brevi dentato, ventre spiraque plicatis. Habitat . . .

\*\*\*\* *Turriti, spira longissima.*

1213. TUBERCULATUS. 514. S. testa turrita ovato-oblonga tuberculata, labro incrassato. Habitat in M. Mediterraneo. Testa ovato-oblonga, rudis, quasi calce obducta, anfractibus seriatis punctis corneis eminentibus. Labrum sutura quasi gibbum. Apertura ovata. Cauda brevissima, recurvata.

1213. PALUSTRIS. 515. S. testa turrita læviuscula, labro postice soluto. *Rumph. mus. t. 30. f. Q.*—*Seb. mus. 3. t. 50. f. 13, 14, 17, 18.* Habitat in Indiæ paludibus.

1213. ATER. 516. S. testa turrita lævi, labro antice posticeque soluto. *M. L. U. 624. n. 289.\**—*Rumph. mus. t. 30. f. R.* Habitat in Asiæ paludibus.

1213. LIVIDUS. 517. S. testa turrita subangulata nodoso-spinosa, labro antice soluto. *M. L. U. 625. n. 290.\** Habitat in . . .

325. MUREX. Animal Limax. Testa univalvis, spiralis, exasperata suturis membranaceis. Apertura desinens in canalem integrum, rectum s. subadscendentem.

\*a\* *Spinosi, cauda exserta.*

1213. HAUSTELLUM. 518. M. testa ovata tuberculata, cauda elongata subulata recta muricata. *M. L. U. 626. n. 291.\**—*Bonan. recr. 3. t. 268.*—*Rumph. mus. t. 26. f. F. Haustellum.*—*Gualt. test. t. 30. f. E.*—*Argenv. conch. t. 19. f. B. Haustellum.*—*Klein. ostr. t. 4. f. 81.*—*Seb. mus. 3. t. 78. f. 5, 6.* Habitat in O. Asiæ.

1214. TRIBULUS. 519. M. testa ovata spinis setaceis trifariis, cauda elongata subulata recta similiter spinosa. *M. L. U. 626. n. 292.\**—*Column. aqu. t. 60. f. 6. Purpura clavata.*—*Olear. mus. t. 39. f. 1.*—*List. conch. t. 902. f. 22.*—*Bonan. recr. 3. t. 269. Hystrix marina.*—*Rumph. mus. t. 26. f. G. 3.\* Tribulus.*—*Gualt. test. t. 31. f. A, B.\**—*Argenv. conch. t. 19. f. A.\**—*Seb. mus. 3. t. 78. f. 1-4.* Habitat in O. Asiæ, Java. Nobilior varietas\* spinis longissimis integris parallelis pectinata.

1214. CORNUTUS. 520. M. testa subrotunda spinis subulatis obliquis cincta, cauda elongata subulata recta spinis sparsis. *M. L. U. 627. n. 293.*—*Column. aqu. t. 60. f. 3. Purpura cornuta.*—*Pet. gaz. t. 68. f. 12.*—*Rumph. mus. t. 20. f. 5.*—*Gualt. test. t. 30. f. DD.*—*Bonan. recr. 3. t. 283.*—*Kirch. mus. t. 901. f. 21.*—*Adans. seneg. 1. t. 8. f. 20.*—*Seb. mus. 3. t. 78. f. 7, 8, 9.* Habitat in O. Africano.

1214. BRANDARIS. 521. M. testa subovata spinis rectis cincta, cauda mediocri subulata recta spinisque oblique circumdata. *Rond. test.* 64. *Murex Purpura*.—*Bonan. recr.* 3. t. 281. (γ) 282 (β).—*Rumph. mus.* t. 26. f. 4. (γ).—*Gualt. test.* t. 30. f. F. (β).—*Regenf. conch.* 20. t. 6. f. 67.—*Pet. gaz.* t. 68. f. 12.—*Ginan. adr.* 2. t. 8. f. 61, 62. Habitat in M. Mediterraneo. Variat α ventre triplici cingulo spinarum subulatarum. β duplici cingulo spinarum subulatarum. γ duplici cingulo spinarum conicarum, nivea.

1215. TRUNCULUS. 522. M. testa ovata nodosa antierius spinis cincta, cauda brevior truncata perforata. *M. L. U.* 627. n. 294.\*—*Column. purp.* t. 13. f. 1.—*Bonan. recr.* 3. t. 274, 277, 271.—*Gualt. test.* t. 31. f. C.—*Argenv. conch.* t. 19. f. G.—*Klein. ostr.* t. 6. f. 104. Habitat in M. Mediterraneo, Jamaica.

\*β\* *Fronodosi, suturis crispato-frondescentibus, cauda abbreviata, vulgo Purpuræ dicti.*

1215. RAMOSUS. 523. M. testa trifariam frondosa, spira contigua, cauda truncata. *M. L. U.* 628. n. 295.\*—*Column. aqu.* t. 60.—*Bonan. recr.* 3. t. 275, 276.—*Rumph. mus.* t. 26. f. 1. A. *Murex ramosus*.—*Gualt. test.* t. 38. f. A, et t. 37. f. G, H, I, D, L.—*Argenv. conch.* t. 19. f. E, H, C. *Purpura ramosa*.—*Klein. ostr.* t. 4. f. 8.—*Regenf. conch.* t. 1. f. 6.—*Seb. mus.* 3. t. 77. f. 1, 2, 7. Habitat in sinu Persico, Jamaica.

1215. SCORPIO. 524. M. testa quadrariam frondosa, spira capitata, cauda truncata. *M. L. U.* 628. n. 296.\*—*Rumph. mus.* t. 26. f. D. *Scorpio*.—*Gualt. test.* t. 37. f. M.—*Argenv. conch.* t. 19. f. D.—*Seb. mus.* 3. t. 77. f. 13–16. Habitat in O. Asiatico.

1215. SAXATILIS. 525. M. testa quinquariam frondosa, spira contigua cauda abbreviata. *M. L. U.* 629. n. 297.\*—*Rumph. mus.* t. 26. f. C. 2. *Murex minor*.—*Argenv. conch.* t. 19. f. F.—*Seb. mus.* 3. t. 77. f. 4, 5, 6.—*Regenf. conch.* 2. t. 1. f. 6, et t. 9. f. 26. Habitat in O. Asiatico.

1216. ERINACEUS. 526. M. testa multifariam subfrondoso-spinosa, spiræ anfractibus retuso coronatis, cauda abbreviata. *Gualt. test.* t. 49. f. H. Habitat in M. Mediterraneo.

\*γ\* *Varicosi, suturis rotundatis torosis crassisque.*

1216. RANA. 527. M. testa varicibus oppositis compressis scabra, cingulis muricatis, apertura subdentula ovata. *M. L. U.* 629. n. 298.\*—*Bonan. recr.* 3. t. 182.—*Petiv. gaz.* t. 100. f. 12.—*Rumph. mus.* t. 24. f. G. *Rana*.—*Gualt. test.* t. 49. f. L.—*Argenv. conch.* t. 12. f. P, R.—*Seb. mus.* 3. t. 60. f. 13–20.—*Regenf. conch.* 26. t. 6. f. 64. Habitat in O. Asiatico. Varietas suturis spinis aliquot elongatis e Tranquebar.

1216. GYRINUS. 528. M. testa varicibus oppositis continuatis,

punctis tuberculis fasciata, apertura edentula orbiculari. *Seb. mus.* 3. t. 60. f. 25–27. Habitat in M. Mediterraneo. Testa magnitudine nucis coryli, quiescens apice adscendente, undique punctis eminentibus fasciata; suturæ laterales continuatæ, obtusæ; color albus fasciis solitariis in singulo inflectu, sed in infimo binis, per duos ordines punctorum dilatatis.

1216. LAMPAS. 529. M. testa varicibus suboppositis, gibbosa tuberculis longitudinaliter tuberculis, apertura edentula. *M. L. U.* 630. n. 299.\*—*Rond. test.* 2. p. 81.—*Gualt. test.* t. 50. f. D.

*Bubo. β. Rumph. mus.* t. 28. f. C. *Hector.*

*Rubeta. γ. Rumph. mus.* t. 28. f. D. *Ajax.*

Habitat in M. Mediterraneo. Testa viva epidermide vestita, ut in proximis.

1216. OLEARIUM. 530. M. testa varicibus subalternis numeroso-tuberculata, dorso postice mutico striato, apertura edentula. *Rond. test.* 2. p. 88.—*Column. aqu.* t. 53.—*Bonan. recr.* 3. t. 289, 105.—*List. conch.* t. 932. f. 27, 31, 32.—*Adans. seneg.* 1. t. 8. f. 12.—*Seb. mus.* 3. t. 51. f. 29, 31.—*Rumph. mus.* t. 49. f. H.—*Gualt. test.* t. 50. f. A. Habitat in Europa australi; M. Mediterraneo, Africano.

1217. FEMORALE. 531. M. testa varicibus decussatis trigona rugosa, antice nodulosa, apertura edentula: antice transversa. *M. L. U.* 630. n. 300.\*—*Grew. mus.* t. 11. f. 7, 8.—*List. conch.* t. 941.—*Bonan. recr.* 3. t. 290.—*Rumph. mus.* t. 26. f. B. *Murex saxatilis.*—*Gualt. test.* t. 50. f. C.—*Argenv. conch.* t. 13. f. B.—*Regenf. conch.* 6. t. 2. f. 21.—*Seb. mus.* 3. t. 63. f. 7, 8. Habitat in O. Asiatico.

1217. CUTACEUS. 532. M. testa varice solitaria, nodis angulata subrugosa, apertura dentata, columella perforata. *Seb. mus.* 3. t. 49. f. 72, bene. Habitat . . . Testa alba, magnitudine n. Juglandis. Venter sutura unica labro opposita, dorso lævissime striata et tribus nodis antice angulata. Labrum intus scrobiculato-canaliculatum et subdentatum. Cauda productiuscula. Columella in medio perforata. Venter subtus rugis striatis notatus.

1217. LOTORIUM. 533. M. testa varicibus decussatis angulata, nodis longitudinaliter tuberculis, cauda flexuosa, apertura dentata. *M. L. U.* 631. n. 301.\*—*Rumph. mus.* t. 26. f. B?—*Argenv. conch.* t. 13. f. M? Habitat . . .

1217. PILEARE. 534. M. testa varicibus decussatis, subnodoso-rugosa, apertura dentata, cauda subadscendente. *Gualt. test.* t. 49. f. G.—*Seb. mus.* 3. t. 57. f. 29, 31, 23, 24. Habitat in M. Mediterraneo.

1218. PYRUM. 535. M. testa varicosa ovata, transversim sulcata nodosa, cauda longiore flexuosa subulata. *Rumph. mus.* t. 26. f. E?

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Varietates conchyliorum exclusi numerosissimas, Murices tamen frondosos admisi, quamvis inter se nimis affines.

*Pyrum exsiccatum*.—*Gualt. test. t. 37. f. F.*—*Argenv. conch. t. 13. f. O.*—*Regenf. conch. t. 5. f. 50.* Habitat . . . Testa alba, longitudinaliter striata, angulata, transversim sulcata. Cauda longitudine testæ. Faux labro interiorē explanato.

1218. RUBECULA. 536. M. testa varicibus decussatis, obtusa rugis nodosis, ventre æquali, apertura dentata. *M. L. U. 631. n. 302.\**—*Argenv. conch. t. 12. f. K.*—*Gualt. test. t. 49. f. I?*—*Seb. mus. 3. t. 49. f. 1-5.* Habitat . . .

1218. SCROBILATOR. 537. M. testa varicibus scrobiculatis suboppositis, lævigata, apertura dentata. *Gualt. test. t. 49. f. B.*—*Seb. mus. 3. t. 60. f. 13, 15.*—*List. conch. t. 939. f. 34, 39.*—*Pet. gaz. t. 100. f. 12.*—*Adans. seneg. 1. t. 8. f. 13.* Habitat in M. Mediterraneo.

1218. RETICULARIS. 538. M. testa varicibus suboppositis reticulata, maculis tuberculatis, columella subdentula, cauda adscendente. *M. L. U. 632. n. 303.\**—*Rumph. mus. t. 29. f. N.*—*Bonan. recr. 3. t. 193.*—*Gualt. test. t. 49. f. M.* Habitat in Carolina.

1218. ANUS. 539. M. testa varice labiisque dilatato-membranaccis, gibbosa reticulato-tuberculata, apertura sinuosa, cauda erecta. *M. L. U. 632. n. 304.\**—*Bonan. recr. 3. t. 279, 280.*—*Rumph. mus. t. 24. f. F.*—*Auris hirsuta.*—*Pet. gaz. t. 74. f. 9, vel t. 99. f. 10.*—*Gualt. test. t. 37. f. B, E.*—*Argenv. conch. t. 12. f. H.* *Distorsio s. Grimace.*—*Seb. mus. 3. t. 60. f. 6, 7.* Habitat in O. Asiatico.

\*8\* *Ecaudati, subechinati.*

1219. RICINUS. 540. M. testa ecaudata obovata, spinis subulatis, apertura dentata, labro dentato. *M. L. U. 633. n. 305.\**—*Rumph. mus. t. 24. f. E.* *Os luteum.*—*Gualt. test. t. 28. f. N.*—*Seb. mus. 3. t. 60. f. 37, 39, 42.* Habitat in O. Asiatico. Faux violacea.

1219. NODUS. 541. M. testa ecaudata obovata, spinis conicis, labro dentato, columella lævi colorata. *Mus. L. U. 635. n. 309.\** Habitat . . . Faux incarnata.

1219. NERITOIDEUS. 542. M. testa ecaudata nodosa plurimis ordinibus, labro angulato, columella planiuscula. *Syst. nat. 10. p. 777. n. 628.* *Nerita nodosa.*—*Bonan. recr. 3. t. 173, 174.*—*List. conch. t. 804. f. 13.*—*Gualt. test. t. 66. f. BB.*—*Klein. ostr. 17. t. 1. f. 30.* Habitat . . . Structura Neritæ; habitus Muricis. Apertura non effusa est, verum uti Neritæ integra, sed habitus hujus generis.

1219. HYSTRIX. 543. M. testa ecaudata subovata, spinis acutis, apertura edentula repanda. *M. L. U. 635. n. 310.\**—*Argenv. conch. t. 17. f. A.* *Hericius.*—*Seb. mus. 3. t. 60. f. 60. f. 38.* Habitat . . .

1219. MANCINELLA. 544. M. testa ecaudata ovata, spinis obsoletis, apertura edentula, columella transversim striata. *M. L. U. 636. n. 311.\**—*Rumph. mus. t. 24. f. 5.*—*Argenv. t. 20. f. H.* Habitat . . .

1219. HIPPOCASTANUM. 545. M. testa ecaudata ovata striata qua-

drifariam subspinosā, apertura transversim striatā. *M. L. U.* 636. n. 312.\*—*Rumph. mus. t. 24. f. 4. Pimpeltjes e Banda.*—*Gualt. test. t. 31. f. F.*—*Argenv. conch. t. 17. f. L?*—*Klein. ostr. t. 7. f. 112.*—*Regenf. conch. 12. t. 13. f. 32.* Habitat in O. Asiæ ad Bandam.

1220. SENTICOSUS. 546. *M. testa* ecaudata subturrita longitudinaliter costata, transversim cancellata, apertura striatā. *Bonan. recr. 3. t. 35.*—*Gualt. test. t. 51. f. G, I.*—*Argenv. conch. t. 12. f. O.*—*Seb. mus. 3. t. 49. f. 45, 46, 47.* Habitat . . . Columellæ plica una alterave.

1220. MELONGENA. 547. *M. testa* ecaudata obovata glauca, anfractu subspinoso, spira prominula, apertura lævi. *M. L. U.* 637. n. 313.\*—*Bonan. recr. 3. 295, 186.*—*Rumph. mus. t. 24. f. 2, 3.*—*Gualt. test. t. 26. f. F.*—*Argenv. conch. t. 18. f. H.*—*Regenf. conch. 20. t. 5. f. 49, et t. 10. f. 36.*—*Seb. mus. 3. t. 72. f. 1–8.* Habitat in America. Variat cum et sine spinis.

\*ζ\* *Caudigeri*: cauda subulata clausa recta elongata, testa inermi.

1220. CARIOSUS. 548. *M. testa* ccaudata subplicata ovata acuminata apice carioso. Habitat in Aquæductu ad Sevillam. *Cl. Alströmer.* Testa magnitudine fabæ, ovata, oblonga, acuminata, cinerea, subdiaphana, longitudinaliter sulcata, sed obsoletius. Apex cariosus. Basis emarginata.

1220. BABYLONIUS. 549. *M. testa* turrita cingulis acutis maculatis recto-caudata, labro fisso. *M. L. U.* 639. n. 317.\*—*List. conch. t. 917. f. 11.*—*Rumph. mus. t. 29. f. L.* *Turris babylonica.*—*Gualt. test. t. 51. f. NN.*—*Argenv. conch. t. 12. f. M.* *Turris babylonica.*—*Regenf. conch. t. 1. f. 9.*—*Seb. mus. 3. t. 79. f. lateralis.* Habitat in Asia.

1221. JAVANUS. 550. *M. testa* turrita cingulis nodosis immaculatis labro sinu separato. Habitat in Java. *Noordgren.* Simillimus *M. babylonico*, sed albus immaculatus. Anfractus substriati, cincti carina vel tuberculis nodosi vel angulati. Labrum fissum versus basin, sed sinu latiusculo magis obtuso. Cauda longior aut brevior variat.

1221. COLUS. 551. *M. testa* turrita subrecto-caudata striata nodosa carinata, labro crenulato. *M. L. U.* 639. n. 317.\*—*Bonan. recr. 3. t. 360.*—*Rumph. mus. t. 29. f. F.* *Fusus.*—*Gualt. test. t. 52. f. L.*—*Argenv. conch. t. 12. f. B.*—*Klein. ostr. t. 4. f. 78.*—*Regenf. conch. t. 12. f. 62.*—*Seb. mus. 3. t. 19. f. centralis.* Habitat in utraque India. Testæ cauda huic longissima. Variat ventre tereti et angulato.

1221. MORIO. 552. *M. testa* patulo-caudata nigra fascia alba, spiræ anfractibus subnodosis, columella rugosa. *M. L. U.* 640. n. 319.\*—*Bonan. recr. 3. t. 357.*—*Regenf. conch. t. 11. f. 61.*—*Adans. seneg. t. 2. f. 31.*—*Seb. mus. 3. t. 83. f. omnes, et t. 52. f. 5, 6.* Habitat in M. Africano.

1221. COCHLIDIUM. 553. *M. testa* patulo-caudata, spiræ anfracti-

bus supra planis. *M. L. U.* 640. n. 320.\*—*Argenv. conch. t.* 12. f. A.—*Seb. mus.* 3. t. 57. f. 27, 28. Habitat . . .

1221. SPIRILLUS. 554. *M.* testa caudata, spiræ mucronatæ anfractibus supra convexis. Habitat in Tranquebar. *Sprengler.* Simillimus *M.* canaliculato, sed anfractus sulco non distincti. Corpus subtus ventricosum, supra convexum, spiræ centro mucrone prominente obtuso: anfractus supra margine acuto cincti. Cauda subcylindrica, nec versus aperturam ventris dilata, sed columella ruga transversa a ventre distincta.

1222. CANALICULATUS. 555. *M.* testa patulo-caudata, spiræ anfractibus supra canaliculo distinctis. *M. L. U.* 641. n. 321.\*—*Gualt. test.* 47. f. A.—*Seb. mus.* 3. t. 68. f. 22.—*Ellis corall.* 85. t. 33. f. B.

*Granum.* β. *M.* testa hemispherica glabra diaphana, cauda recta patula, vertice papillari. *Syst. nat.* 10. p. 752. n. 477.—*Ellis. corall.* 851. t. 33. f. a. A.—*Baster. subs.* t. 6. f. 2. B.

Habitat ad Canadam. Varietas β est pullus. Testa grano secalis minor alba. Anfractus unicus, antice vix manifeste rugosus. Cauda recta, longitudine ipsius testæ. Apertura obovata.

1222. ARUANUS. 556. *M.* testa patulo caudata, spira spinoso-coronata. *M. L. U.* 641. n. 322.\*—*Rumph. mus. t.* 28. f. A. *Buccinum aruanum.*—*Gualt. test. t.* 47. f. B.—*Bonan. recr.* 3. t. 101. Habitat ad Novam Guineam, Chinam. Testa ponderosa rudis, sæpe nigra s. subcærulea.

1222. PERVERSUS. 557. *M.* testa patulo-repandoque caudata, spira contraria subcoronata. *M. L. U.* 642. n. 323.\*—*Gualt. test. t.* 30. f. B.—*Argenv. conch. t.* 18. f. F. *Unique.* Habitat in O. Americano.

1222. ANTIQVUS. 558. *M.* testa patulo-caudata oblonga, anfractibus octo teretibus. *Fn. suec.* 2165.—*Gualt. test. t.* 46. f. E. Habitat in O. Europæo: Norvegico. Simillimus cum sequenti est *Buccino undato.*

1222. DESPECTUS. 559. *M.* testa patulo-subcaudata oblonga, anfractibus octo: lineis duabus elevatis. *Fn. suec.* 1266.—*It. Wgoth. t.* 5. f. 8.—*List. angl. t.* 3. f. 1. Habitat in O. Septentrionali: Islandia. Rudis omnino uti præcedens testa est.

1222. TRITONIS. 560. *M.* testa ventricosa oblonga lævi, anfractibus rotundatis, apertura dentata, cauda brevi. *M. L. U.* 642. n. 324.\*—*Rond. test.* 81. *Buccinum.*—*Rumph. mus. t.* 28. f. B. *Buccinum Tritonis.*—*Gualt. test. t.* 48. f. A.—*Seb. mus.* 3. t. 81. f. omnes. Habitat in Archipelago, America. In Oriente et Africa etiam hodie pro cornu militari a pastoribus usurpatur vehementiori sono, quam tubæ stentoreæ vulgaris aut Cornu Capri. Buccina jam priscos cogebat ad arma Quirites. Anfractus distincti sutura nodulosa, hinc inde quasi abscissi et agglutinati nodo. Apex sæpe diffractus. Columella striis transversis nigris. Color lividus, nigro quasi imbricatus.



1223. PUSIO. 561. M. testa ventricosa oblonga lævi, anfractibus rotundatis, spira striata, apertura lævi, cauda brevi. *Bonan. recr. 3. t. 40.*—*Gualt. test. t. 52. f. I.* Habitat in M. Mediterraneo. Testa magnitudine nucis Avellanæ, glauco-cærulescens, fasciis longitudinalibus griseis undatis. Sutura simplex.

1223. TULIPA. 562. M. testa ventricosa oblonga lævi, anfractibus rotundatis sutura geminata, apertura uniplicata, cauda patula striata. *Bonan. recr. 3. t. 187.*—*List. conch. t. 911.*—*Rumph. mus. t. 49. f. II.*—*Gualt. test. t. 46. f. A.*—*Argenv. conch. t. 13. f. K.* Tulipa.—*Regenf. conch. t. 9. f. 35.*—*Seb. mus. 3. t. 57. f. 25, 26, et t. 71. f. 23–31.* Habitat . . .

1223. CLATHRATUS. 563. M. testa oblonga caudata, plicis longitudinalibus submembranaceis sulcata. *Klein. ostr. t. 3. f. 67.* Habitat in Islandia Mari. *F. Zoega. König.* Testa magnitudine et facie Turbinis clathri, sed leviter caudata. Plicæ plurimæ, longitudinales, erectæ, compressæ, superne inclinatæ.

1223. DOLARIUM. 564. M. testa patulo-caudata ovata, anfractibus cingulis aliquot elevatis obtusis. *Bonan. recr. 3. t. 347.* Habitat in Oceano. *Job. Hinr. Ferber.* Testa Juglandis magnitudine, cornea, ovata, utrinque magis attenuata. Cingula maxime elevata, obtusa, plura ventrem cingunt, inter quæ testa substriata est, et 2 cingunt spiram anfractus. Apertura ovata, antice subtransversa, excavata ad marginem exteriorem secundum cingula. Postice attenuata in canalem vix manifestum, vixque emarginatum. Columella perforata.

1224. CORNEUS. 565. M. testa oblonga rudi, anfractuum marginibus complanatis, apice tuberculoso, apertura edentula, cauda adscendente. *It. Wgoth. t. 5. f. 6. fossilis.*—*Gualt. test. t. 46. f. F.*—*List. angl. 157. t. 3. f. 4.* Habitat in Europa australiore. Testa digito brevior, colore cornu, lævis, sed non glabra, opaca.

1224. LIGNARIUS. 566. M. testa oblonga rudi, anfractibus obtuse nodosis, apertura edentula, cauda brevi rectiuscula. *Bonan. recr. 3. t. 32.*—*Gualt. test. t. 52. f. S?*—*Seb. mus. 3. t. 52. f. 4.* Habitat in Europa australi. Testa vix digiti longitudine; anfractus læves, rudes, simplici serie tuberibus obtusis.

1224. TRAPEZIUM. 567. M. testa oblonga obtuse angulata, anfractibus subnodosis, apertura dentata, cauda brevior recta. *M. L. U. 613. n. 325.\**—*Bonan. recr. 3. t. 287.*—*Rumph. mus. t. 29. f. E, et t. 49. f. K.* Pseudo-Purpura.—*Gualt. test. t. 46. f. B.*—*Argenv. conch. t. 13. f. F, H.* Habitat ad Amboinam. Lineæ geminæ semper, fuscæ, integræ.

1224. SYRACUSANUS. 568. M. testa oblonga, anfractibus striatis plicatis, tuberculoso-carinatis, apertura edentula, cauda brevi. *Bonan. recr. 3. t. 80.* Habitat in M. Mediterraneo. Testa anfractuum tectis testaceis, parietibus vero albis.

1224. CRATICULATUS. 569. M. testa oblonga, anfractibus rotundatis plicatis transversim reticulatis, apertura dentata, cauda brevi. *Rond. test.* 89. *Turbo angulatus*. Habitat in M. Mediterraneo. Testa oblonga anfractibus elevato-striatis, albida, longitudinaliter subplicata angulis elevatis ferrugineis. Cauda brevis. Apertura intus striata.

1225. SCRIPTUS. 570. M. testa subcaudata fusiformi lævi pallida: striis fuscis longitudinalibus variis, labio dentato. Habitat in M. Mediterraneo. Testa S. Hordei paulo major, undique lævis, oblonga, vix caudata, pallide albida, commaculata striis oblongis flexuosis subpiccis.

\*η\* *Turriti subulati, cauda brevissima.*

1225. VERTAGUS. 571. M. testa turrita, anfractibus superne plicatis, cauda adscendente, columella intus plicata. *Bonan. recr. t.* 84. —*Rumph. mus.* 100. *t.* 30. *f.* K. *Strombus caudatus albus*.—*Pet. gaz. t.* 56. *f.* 4.—*Argenv. conch. t.* 14. *f.* P.—*Gualt. test. t.* 57. *f.* D. Habitat . . . Testa alba, digitiformis. Anfractus sæpius 15, superne plicati. Cauda brevissima, adscendens. Columella plica altera prope spiram, altera in medio.

1225. ALUCO. 572. M. testa turrita, anfractibus tuberculatis, stria media spinosa, columella uniplicata, cauda adscendente. *M. L. U.* 643. *n.* 326.\*—*Bonan. recr.* 3. *t.* 69, 83.—*Rumph. mus. t.* 30. *f.* O, N. *Strombus angulosus*.—*Gualt. test. t.* 57. *f.* G, A.—*Argenv. conch. t.* 14. *f.* H. *Eruca confabulata*.—*Seb. mus.* 3. *t.* 51. *f.* 25. Habitat in M. Mediterraneo. Testa cinerea labro rotundato.

1225. FUSCATUS. 573. M. testa turrita, anfractibus crenulatis: stria superiore denticulata. *Gualt. test. t.* 56. *f.* H.—*Argenv. conch. t.* 14. *f.* G. Habitat in M. Mediterraneo. Testa fusca, basi obtusa.

1226. TORULOSA. 574. M. testa turrita, anfractibus superne zona torulosa, cauda brevi. Habitat . . . e Museo Hen. Gyllenborg. Testa alba, lævis s. parum longitudinaliter striata. Anfractus cincti zona gibba, elevata, obtusa, torulosa. Apex plicatus.

1226. RADULA. 575. M. testa turrita, anfractibus tuberculatis: striis duplici serie punctatis. *Gualt. test. t.* 58. *f.* F. Habitat in O. Africano. Testa subincarnata, basi obtusa; anfractuum puncta sæpe apice alba.

1226. ASPER. 576. M. testa turrita, anfractibus sulcatis transversim striatis muricatis, cauda adscendente. Habitat in M. Guineensi. Testa lactea, subulata, solida, 12 s. 14 sulcis longitudinalibus: singulis 4 pluribus; ore spinis brevibus. Cauda adscendens, labro interiore planiusculo, uniplicato.

1226. GRANULATUS. 577. M. testa turrita tuberculis decussatim adspersa, cauda acuta adscendente. *Bonan. recr.* 3. *t.* 81.—*Rumph. mus. t.* 30. *f.* L. *Strombus caudatus angulosus*.—*Argenv. conch. t.* 14. *f.* K.—*Klein. ostr. t.* 7. *f.* 119. Habitat in O. Asiatico. Testam tantum vidi, quam inhabitavit et reformavit hospes Bernhardus Eremita.

1226. DECOLLATUS. 578. M. testa turrita anfractibus longitudinaliter plicato-sulcatis, apice decollato. Habitat . . . Musci de Geer. Similis Helici decollatæ, sed basis emarginata. Anfractus margine superiore attenuato: striæ longitudinales plicis imbricatis, interjectis sulcis ipsis atris opacis. Apex truncatus. Apertura obovata.

326. TROCHUS. Animal Limax. Testa univalvis, spiralis, subconica. Apertura subtetragono-angulata s. -rotundata, superius transversa, coarctata; columella obliquata.

\* *Umbilicati erecti, perforata columella.*

1227. NILOTICUS. 579. T. testa conica læviuscula subumbilicata. *Olear. mus. t. 29. f. 5.*—*Bonan. recr. 3. t. 102.*—*Rumph. mus. t. 21. f. A.*—*Gualt. test. t. 59. f. B, C.*—*Argenv. conch. t. 11. f. C.*—*Regenf. conch. t. 4. f. 42.* Habitat in O. Indico. Testa magna, ponderosa, picta striis oblique perpendicularibus rubris, etiam subtus; apex obsolete nodulosus. Anfractus minime nodosi. Apertura argentea labro interiore obsolete bilobo. Detracta extima tunica evadit tota argentea. Differt a T. maculato: fauce intus minime striata, sed lævi. Columella non denticulata: basi ventris convexa lævi, nec decussatim striata et planiuscula.

1227. MACULATUS. 580. T. testa conica tuberculata, umbilico obliquo, labio interiore obsolete bilobo. *M. L. U. 644. n. 327.\**—*Bonan. recr. 3. t. 96.*—*Rumph. mus. t. 21. f. B, 4, 3.* *Trochus maculosus.*—*Gualt. test. t. 61. f. E.*—*Argenv. conch. t. 11. f. C.* Habitat in O. Americano, Asiatico.

1227. PERSPECTIVUS. 581. T. testa convexa obtusa marginata, umbilico pervio crenulato. *M. L. U. 646. n. 329.\**—*Grew. mus. t. 11. f. 3, 4.*—*List. conch. 4. s. 8. c. 3. t. 1, 2.*—*Bonan. recr. 3. t. 27, 28.*—*Rumph. mus. t. 27. f. L.* *Umbilicata.*—*Pet. amboin. t. 2. f. 14.*—*Gualt. test. t. 65. f. O.*—*Argenv. conch. t. 11. f. M.* *Solarium.*—*Regenf. conch. 26. t. 6. f. 61.*—*Seb. mus. 3. t. 40. f. 1, 2, 13, 14, 28, 41. 42.* Habitat ad O. Asiæ littora; Alexandriæ frequens. Umbilicus stupendum naturæ artificium.

1228. HYBRIDUS. 582. T. testa umbilicata convexa, columella bidentata, umbilico crenulato. *M. L. U. 646. n. 330.\** Habitat in M. Mediterraneo.

1228. CRUCIATUS. 583. T. testa umbilicata convexa: striis callosopunctatis, columella unidentata. Habitat in M. Mediterraneo. Testa Avellana minor, ferruginea, fasciis longitudinalibus quatuor albidis.

1228. PHARAONIUS. 584. T. testa subovata striata: punctis concatenatis globosis, columella aperturaque dentata, umbilico crenato. *M. L. U. 647. n. 331.\**—*Bonan. recr. 141. p. 3. t. 222.*—*Rond. test. 104.* *Umbilicus varius.*—*List. conch. 4. s. 8. c. 4. t. 1.*—*Pet. gaz. t. 14. f. 10.*—*Gualt. test. t. 63. f. B.*—*Argenv. conch. t. 11. f. L, Q.*

*Camisole*.—*Adans. seneg.* 1. t. 12. f. 2. Habitat in M. Mediterraneo, Brasilæ. Puncta nivea et atra, alterna serie in ordinibus transversis.

1228. MAGUS. 585. T. testa oblique umbilicata convexa: anfractibus supra obtuse nodulosis. *M. L. U.* 647. n. 332.\*—*Gualt. test.* t. 64. f. C.—*Argenv. conch.* t. 11. f. S. *Sorcière*.—*Regenf. conch.* 12. t. 3. f. 27.—*Seb. mus.* 3. t. 73. f. 13, 14. Habitat in M. Mediterraneo.

1228. MODULUS. 586. T. testa umbilicata striata: supra plicata, subtus convexiore, apertura obovata unidentata. *Seb. mus.* 3. t. 34. f. 12. Habitat . . . e Museo Tessiniano. Testa magnitudine T. pharaonii, albida, purpurascens-maculata; sublenticularis, supra obtuse plicata, subtus magis convexa, undique striata, juxta umbilicum in apertura dens e columella plicata.

1229. MURICATUS. 587. T. testa subumbilicata ovata: tuberculis muricatis. *M. L. U.* 648. n. 333.\*—*Gualt. test.* t. 64. f. H. Habitat in M. Mediterraneo.

1229. SCABER. 588. T. testa umbilicata subovata: sulcis alternis majoribus moniliformibus. *M. L. U.* 648. n. 334.\*—*Argenv. conch.* t. 11. f. T. Habitat . . .

1229. VARIUS. 589. T. testa oblique umbilicata convexa, anfractibus submarginatis. Habitat in M. Mediterraneo. Testa convexa, cincta margine obsoleto, pallida fasciis cinerascens.

1229. CINERARIUS. 590. T. testa oblique umbilicata ovata, anfractibus rotundatis. *En. succ.* 2167. Habitat in M. Mediterraneo, Norvegico. Testa cinerea fasciis obliquis pallidis.

1229. DIVARICATUS. 591. T. testa subumbilicata ovata: anfractu infimo remotiore, umbilico subconsolidato. Habitat in M. Mediterraneo. Testa viridis, fasciata punctis sanguineis. Anfractus versus aperturam magis remotus a reliqua spira.

1229. UMBILICARIS. 592. T. testa cylindrico-umbilicata conico-convexa: anfractu submarginato. Habitat in M. Mediterraneo. Testa sæpius ferruginea nebulosa; umbilicus pervius teres exacte cylindricus, præter anfractus minores interiores et intus albus.

1229. SOLARIS. 593. T. testa umbilicata convexo-conica, anfractibus spinoso-radiatis, apertura semicordata. *M. L. U.* 645. n. 328.\*—*Bonan. recr.* 3. t. 366, 367, mala.—*Rumph. mus.* t. 20. f. K. *Zonnehooren*.—*Argenv. conch.* t. 9. f. R.—*Gualt. test.* t. 65. f. N, P? Habitat in India orientali; rarissimus.

\*\* *Imperforati erecti, umbilico clauso.*

1230. VESTIARIUS. 594. T. testa imperforata conico-convexa, basi gibboso-callosa, apertura subcordata. *Pet. gaz.* t. 11. f. 6.—*Gualt. test.* t. 65. f. E, F, G. Habitat in M. Mediterraneo, Asiatico, Chinensi. Statura T. pharaonii, supra glauca, lineis transversis undatis pallidis, colore ludentibus. Subtus notat, callo convexo lato albedo.

1230. LABIO. 595. T. testa imperforata ovata substriata, columella unidentata. *M. L. U.* 649. n. 335.\*—*List. conch.* 4. s. 8. c. 4. t. 3.—*Rumph. mus.* t. 21. f. E. Labio.—*Gualt. test.* t. 63. f. D, E, G.—*Argenv. conch.* t. 9. f. N.—*Regenf. conch.* t. 10. f. 39. Habitat in O. Africano et Asiatico.

1230. TUBER. 596. T. testa imperforata depressiuscula, anfractibus subcarinatis margine superiore inferioreque nodulosus. *Argenv. conch.* t. 11. f. R.—*Regenf. conch.* t. 3. f. 27. Habitat in M. Mediterraneo. Apertura subrotunda est et carina anfractuum lateralis.

1230. STRIATUS. 597. T. testa imperforata conica: anfractu infimo subangulato, apertura obovata. *Gualt. test.* t. 61. f. N. Habitat in M. Mediterraneo. Minutus. Testa alba lineis longitudinalibus obliquis nigris; similis sequentibus duobus, sed infimus anfractus angulo cinctus est.

1230. CONULUS. 598. T. testa imperforata conica lævi, anfractibus linea elevata interstinctis. *Bonan. recr.* 3. t. 91, 99.—*List. angl.* 166. t. 3. f. 15.—*Gualt. test.* t. 61. f. N, M. Habitat in M. Mediterraneo et O. Europæo. Testa sequenti simillima, ut fere varietas minima, etiam apice tuberculata, sed linea inter anfractus prominula; color pulcherrime variegatus.

1231. ZIZYPHINUS. 599. T. testa imperforata conica livida lævi, anfractibus marginatis. *Fn. succ.* 2168.—*M. L. U.* 650. n. 336.\*—*Bonan. recr.* 3. t. 93.—*Rumph. mus.* t. 21. f. 1.—*List. angl.* 166. t. 3. f. 14.—*Gualt. test.* t. 61. f. B, C.—*Argenv. conch.* t. 11. f. N?—*Klein. ostr.* t. 2. f. 36. Habitat in M. Mediterraneo et Europæo. Testa, exuta tunica extima, plumbea evadit.

\*\*\* *Turriti, umbilico exserto, qui positi cadunt in latus.*

1231. TELESCOPIUM. 600. T. testa imperforata turrita striata, columella exserta spirali. *M. L. U.* 650. n. 337.\*—*Bonan. recr.* 3. t. 92.—*List. conch.* 4. s. 8. c. 1. t. 5. f. 1.—*Rumph. mus.* t. 21. f. 12.—*Gualt. test.* t. 60. f. D, E.—*Argenv. conch.* t. 14. f. B. *Telescopium.*—*Seb. mus.* 3. t. 50. f. 1–12. Habitat . . .

1231. DOLABRATUS. 601. T. testa umbilicata turrita glabra, columella exserta recurvato-contorta plicata. *M. L. U.* 651. n. 338.\*—*Argenv. conch.* t. 14. f. L. Habitat in Africa; terrestres. Apertura singularis distorto ad columellam ore triplicato. Umbilicus perforatus. Color Bullæ Virgineæ.

1231. PERVERSUS. 602. T. testa imperforata turrita glabra, anfractibus contrariis serie duplici excavato-punctatis. Habitat in M. Mediterraneo. Testa parva, anfractibus cylindricis, duplici serie excavato punctatis, præter margines anfractuum etiam crenato-punctatis. Apertura quadrata: columella basi prominula, at non in canalem evidentem. Color fere corneus.

1231. PUNCTATUS. 603. T. testa imperforata turrita, anfractibus

serie triplici punctorum prominentium. Habitat in Europa australi. Testa magnitudine præcedentis s. Hordei, ferruginea, undique punctis obtusis eminentibus oblecta, in singulo anfractu serie triplici, quarum intermedia minor est. Apertura quadrata cum columella prominula, vix manifeste canaliculata.

1232. STRIATELLUS. 604. T. testa turrata imperforata: striis longitudinalibus parallelis obliquatis. Habitat in M. Mediterraneo. Testa admodum parva, subulata, alba, apice violacea.

357. TURBO. Animal Limax. Testa univalvis, spiralis, solida. Apertura coarctata, orbiculata, integra.

\* *Neritoidei, aperturæ margine columnari plano imperforato.*

1232. OBTUSATUS. 605. T. testa subrotunda lævi: superne ventriosiore obtusissima, margine columnari plano. Habitat in O. Septentrionali.

1232. NERITOIDES. 606. T. testa ovata glabra obtusiuscula, margine columnari plano. *Gualt. test. t. 45. f. F.* Habitat in M. Mediterraneo. Testa Neritis maxime affinis; minuta.

1232. LITTOREUS. 607. T. testa subovata acuta striata, margine columnari plano. *Fn. succ. 2169.—It. wgoth. 169, 199. t. 5. f. 4.—Swamm. bibl. 183.—List. angl. 162. t. 3. f. 9.—Gualt. test. t. 45. f. G.—Baster. subs. 3 p. 110. f. 1. Turbo littoralis.* Habitat in O. Europæo, frequens ad littora Norvegiæ: quando littora adscendit, indicat ventum a terra, pacatum ad littus. *Ström.*

1232. MURICATUS. 608. T. testa umbilicata subovata acuta cincta striis punctis eminentibus, margine columnari obtusiusculo. *Gualt. test. t. 45. f. E.* Habitat in Europa australi.

\*\* *Solidi, imperforati.*

1233. CIMEX. 609. T. testa oblongo-ovata striis decussatis: punctis eminentibus. *Gualt. test. t. 44. f. X.—Adans. seneg. 1. t. 10. f. 6.* Habitat in M. Mediterraneo, minutus.

1233. PULLUS. 610. T. testa imperforata ovata lævi, apertura antice diducta. Habitat in M. Mediterraneo. Testa magnitudine seminis Carthami nitida, picta varie fasciis maculisque purpurascens fuscis albidisve. Apertura antice angulum format, uti T. Petholatus, cui valde affinis.

1233. PERSONATUS. 611. T. testa imperforata convexa lævi, apertura diducta. *M. L. U. 652. n. 339.\*—Rumph. mus. t. 19. f. 1.* Habitat . . .

1233. PETHOLATUS. 612. T. testa imperforata ovata lævi nitida, anfractibus sursum subangulatis. *M. L. U. 652. n. 340.\*—Bellon. aqu. 340. Cochlus s. Umbilicus.—Rumph. mus. t. 19. f. D, 5, 6, 7. Cochlea petholata.—Argenv. conch. t. 9. f. K. Cochlea variegata.—*

*Klein. ostr. t. 2. f. 51.—Seb. mus. 3. t. 74. f. 23–29.—Regenf. conch. t. 8. f. 18, et t. 9. f. 25.* Habitat ad Barbados.

1233. COCHLUS. 613. T. testa imperforata ovata striata: stria unica dorsali crassiore. *List. conch. t. 584. f. 40.—Rumph. mus. t. 19. f. 4.—Argenv. conch. t. 9. f. I.—Regenf. conch. t. 1. f. 12.—Seb. mus. 3. t. 74. f. 20, 21, 6.* Habitat in O. Asiatico. Alexandriae, Islandiae. Similis T. argyrostomo, sed nullae striae transversae. Umbilicus Veneris officinarum nostrarum proprie hujus operculum subrotundum, gibbum, lateribus striatum.

1233. CHRYSOSTOMUS. 614. T. testa imperforata, subovata, rugosa: anfractibus bifariam spinulis fornicatis cincta. *M. L. U. 653. n. 341.\*—Rumph. mus. t. 19. f. E. Cochlea lunaris aspera.—Gualt. test. t. 62. f. H.—Argenv. conch. t. 9. f. D. Os aureum.—Klein. ostr. t. 7. f. 126.—Seb. mus. 3. t. 74. f. 9, 10, 11.* Habitat in O. Asiatico. Faux saepius in adultis aurea est; anfractus superni plicati.

1234. TECTUM-PERSICUM. 615. T. testa imperforata ovata: spinis obtusis depressis, subtus papillosa. *M. L. U. 653. n. 342.\*—Argenv. conch. t. 11. f. P.* Habitat . . . Operculum hujus Umbilicus Veneris incarnatus.

1234. PAGODUS. 616. T. testa imperforata conica, spinis obtusis concatenatis, subtus papilloso-striata. *M. L. U. 654. n. 343.\*—Rumph. mus. t. 21. f. D. Trochus papuanus s. longævus.—Gualt. test. t. 62. f. B, C.—Argenv. conch. t. 11. f. A. Pagodus.* Habitat in O. Asiatico.

1234. CALCAR. 617. T. testa subimperforata depressa: anfractibus scabris supra spinis fornicato-compressis. *M. L. U. 654. n. 344.\*—List. conch. 4. s. 6. t. 1. f. 3, 4.—Rumph. mus. t. 20. f. I. Calcar.—Argenv. conch. t. 11. f. H. Calcar bene.—Klein. ostr. t. 1. f. 27.* Habitat ad Amboinam.

1234. RUGOSUS. 618. T. testa imperforata subovata striata, anfractibus superne rugosis. *Bonan. recr. 3. t. 12.—Gualt. test. t. 63. f. C, F, H.—Seb. mus. t. 3. f. 74. f. 14, 13.* Habitat in India. Faux argentea columellæ labro purpureo. Anfractus striati latere superiore rugis obsolete nodosi.

1234. MARMORATUS. 619. T. testa imperforata subovata lævi: anfractibus trifariam marginato-nodulosa, cauda postice explanata. *M. L. U. 655. n. 345.\*—Rumph. mus. t. 19. fig. A, B. Cochlea lunaris major.—Gualt. test. t. 64. f. A.—Klein. ostr. t. 7. f. 124.—Seb. mus. 3. t. 74. f. 1, 2.—Regenf. conch. 20. t. 5. f. 52.* Habitat in O. Asiæ ad Zeylonam, Javam. Columella postice extus dilatata. Testa ponderosa.

1235. SARMATICUS. 620. T. testa imperforata convexa obtusa:

anfractibus supra nodosis canali interstinctis. *Argenv. conch. t. 11. f. B.* Habitat . . .

1235. OLEARIUS. 621. T. testa imperforata convexa obtusa angulato-lævi. *Rond. test. 96.*—*Bonan. recr. 3. t. 9.*—*Gualt. test. t. 68. f. A.*—*Argenv. conch. t. 20. f. B.*—*Klein. ostr. t. 7. f. 125.* Habitat in India. Testas tantum reformatas vidimus, easque maximas solidissimasque.

\*\*\* *Solidi, umbilico perforato.*

1235. PICA. 622. T. testa umbilicata conico-rotundata lævi, denticulo umbilicali. *M. L. U. 655. n. 346.\**—*Bonan. recr. 3. t. 29, 30.*—*Rumph. mus. t. 21. f. A.*—*Gualt. test. t. 68. f. B.*—*Argenv. conch. t. 11. f. G.* *Pica.*—*Pet. gaz. t. 70. f. 9.*—*List. conch. t. 640. f. 30.*—*Adans. seneg. 1. t. 12. f. 7.*—*Regenf. conch. t. 6. f. 66, et t. 11. f. 57.* Habitat in M. Sardinico. Umbilicus canali duplici obtuso.

1235. SANGUINEUS. 623. T. testa subumbilicata conico-convexa striata lævi: anfractibus subsulcatis. Habitat in M. Mediterraneo ad littora Algiræ. *E. Brander.* Testa magnitudine Pisi, sanguinea, convexa, anfractibus obtuse sulcata: umbilicus aliis perforatus, aliis nequam.

1236. ARGYROSTOMUS. 624. T. testa umbilicata subovata exarata lineis dorsalibus elatioribus transverse striatis. *M. L. U. 656. n. 347.\**—*List. conch. t. 584. f. 40.*—*Rumph. mus. t. 19. f. 3.*—*Gualt. test. t. 64. f. D.*—*Argenv. conch. t. 9. f. F.* *Os argenteum.*—*Seb. mus. 3. t. 74. f. 6.*—*Regenf. conch. t. 10. f. 43.* Habitat in M. Indico. Affinitas summa T. cochli, sed umbilicatus fauce argentea.

1236. MARGARITACEUS. 625. T. testa umbilicata subovata lineis dorsalibus elatioribus lævibus. *M. L. U. 656. n. 348.\**—*Bonan. recr. 3. t. 11.*—*Rumph. mus. t. 19. f. 3.*—*Argenv. conch. t. 9. f. A.*—*Seb. mus. 3. t. 74. f. 3.* Habitat . . . Testa similis T. Argyrostomo, sed albido-virens maculis fuscis, nec purpurascens aut ferrugineus.

1236. DELPHINUS. 626. T. testa umbilico hispido, anfractibus spinis ramosis. *M. L. U. 657. n. 349.\**—*Grew mus. t. 11. f. 5, 6.*—*Bonan. recr. 3. t. 31.*—*Rumph. mus. t. 20. f. H.* *Cochlea laciniata.*—*Pet. amb. t. 3. f. 1.*—*Gualt. test. t. 68. f. C.*—*Argenv. conch. t. 9. f. H.* *Delphinus.*—*Seb. mus. 3. t. 58. f. 1-27.*—*Regenf. conch. t. 3. f. 14.* Habitat in O. Asiatico.

1236. DISTORTUS. 627. T. testa umbilicata submucronata undique spinis lævibus. *M. L. U. 657. n. 350.\**—*List. conch. 4. s. 6. c. 6. t. 1. f. 1, 2.*—*Gualt. test. t. 68. f. D.* Habitat . . . Varietas procul dubio antecedentis.

\*\*\*\* *Cancellati.*

1236. CRENELLUS. 628. T. testa umbilico patente planiuscula, anfractibus teretibus: striis crenatis. Habitat . . . Testa magnitudine seminis Lupini, rufa, solida, supra plano-convexa, subtus umbilico pa-



tentissimo concava. Anfractus teretes, longitudinaliter striati, striis crenatis.

1237. THERMALIS. 629. T. testa umbilicata oblongiuscula obtusa, anfractibus teretibus lævibus. Habitat prope Thermas Pisanas, in aquis dulcibus. Testa semine Brassicæ paulo major, alba. Anfractus teretes, quaterni. Apertura orbicularis. Umbilicus minutus.

1237. SCALARIS. 630. T. testa cancellata conica, anfractibus distantibus. *M. L. U.* 658. n. 351.\*—*Rumph. mus. t.* 49. f. A. *Scalare Wenteltrap*.—*Pet. amb. t.* 2. f. 9.—*Gualt. test. t.* 10. f. ZZ.—*Argenv. conch. t.* 14. f. V. *Scalaris*. Habitat . . . Varietas fere sequentis, sed magnitudine, anfractibus omnino distantibus, solisque cingulis connexis differt; pretiosissimus artis perditæ luxus.

1237. CLATHRUS. 631. T. testa cancellata turrita exumbilicata, anfractibus contiguis lævibus. *Fn. suec.* 2170.—*M. L. U.* 658. n. 352.\*—*Rond. test.* 89. f. 5.—*List. conch. t.* 588. f. 51.—*Bonan. recr.* 3. t. 111.—*Rumph. mus. t.* 29. f. W. *Buccinum scalare*.—*Gualt. test. t.* 58. f. H.—*Klein. ostr. t.* 3. f. 66.—*Planc. conch. t.* 5. f. 7, 8.—*Ginan. adr.* 2. t. 6. f. 54. Habitat in O. Europæo, Americano, Islandico, Mediterraneo. Purpura violacea veterum, nec punicea, ab hac desumpta. *Planus*. Hæc habet cingula longitudinalia in infimo anfractu versus basin convexa mediante carinula, quod neque T. scalaris, neque ambiguus obtinet; præterea cingula membranacea longitudinaliter huic 12 s. 16, cum in Scalari 8, in ambigua 30 adsint.

1237. AMBIGUUS. 632. T. testa cancellata turrita umbilicata, anfractibus contiguis lævibus. Habitat in M. Mediterraneo. Simillima T. Clathro, a quo differt membranis duplo pluribus, anfractibus ipsis non albis, sed pallidis, 2 s. 3 lineis ferrugineis secundum anfractus pictis et basi umbilicata.

1238. CRENATUS. 633. T. testa subcancellata turrita: anfractibus contiguis supra crenatis. *M. L. U.* 659. n. 353.\* Habitat . . .

1238. LACTEUS. 634. T. testa cancellata turrita: striis longitudinalibus elevatis confertis. *Ginan. adr.* 2. t. 6. f. 55. Habitat in M. Mediterraneo. Testa similis T. Clathro, sed minor gr. Hordei, striis elevatis, nec tamen membranaceis, et valde confertis; nivea.

1238. STRIATULUS. 635. T. testa subcancellata turrita: anfractibus contiguis cingulisque varicosis interceptis. Habitat in M. Mediterraneo. Testa magnitudine seminis Hordei, alba, anfractibus cinetis striis membranaceis parvis, passimque rugis convexis callosis. Apertura minus orbiculata, fere obovata et subtus subangulata.

1238. UVA. 636. T. testa cancellata ovata obtusa: anfractibus contiguis: striis longitudinalibus imbricatis. *M. L. U.* 659. n. 354.\*—*Pet. gaz. t.* 27. f. 2. *Olivaris striata fasciata*.—*Bonan. recr.* 3. t. 140.—*Gualt. test. t.* 58. f. D.—*Seb. mus.* 3. t. 55. f. 21. n. a-h. Habitat . . . Apertura unidentata.

1238. CORNEUS. 637. T. testa umbilicata rotundata acutiuscula: anfractibus teretiusculis decussato-striatis, apertura reflexa. *M. L. U.* 660. n. 355.\* Habitat . . .

1238. REFLEXUS. 638. T. testa umbilicata convexo-prominula, anfractibus teretibus substriatis, apertura reflexa. Habitat in Europa australi.

1239. LINCINA. 639. T. testa oblonga obtusa rugoso-striata, apertura limbo dilatato plano crenato. *List. conch. t. 26. f. 24.*—*Sloan. jam. 2. t. 240. f. 12, 13.*—*Klein. ostr. t. 3. f. 71.*—*Brown. jam. t. 40. f. 5.* Habitat in Jamaica. Terrestris.

\*\*\*\*\* *Turriti proprie dicti.*

1239. IMBRICATUS. 640. T. testa turrita: anfractibus deorsum imbricatis. *M. L. U.* 660. n. 356.\*—*Gualt. test. t. 58. f. E.*—*Seb. mus. 3. t. 56. f. 32.* Habitat in Jamaica.

1239. REPLICATUS. 641. T. testa turrita lævi: anfractibus sursum imbricatis. *M. L. U.* 661. n. 357.\*—*Argenv. conch. t. 14. f. E.* Habitat . . .

1239. ACUTANGULUS. 642. T. testa turrita: anfractibus carina unica majore acuta. *M. L. U.* 661. n. 358.\*—*Bonan. recr. 3. t. 117.*—*Gualt. test. t. 58. f. B.* Habitat . . .

1239. DUPLICATUS. 643. T. testa turrita: anfractibus carinis duabus acutis. *M. L. U.* 662. n. 359.\*—*Bonan. recr. 3. t. 114.*—*List. angl. 160. t. 3. f. 7.*—*Gualt. test. t. 58. f. C.*—*Argenv. conch. t. 14. f. C.* *Torculum.*—*Seb. mus. 3. t. 56. f. 7, 8.* Habitat in O. Europæo.

1239. EXOLETUS. 644. T. testa turrita: anfractibus carinis duabus obtusis distantibus. *Bonan. recr. 3. t. 113.* Habitat in Europa australi.

1239. TEREBRA. 645. T. testa turrita: anfractibus carinis sex acutis. *Fn. suec. 2171.*—*M. L. U.* 662. n. 360.\*—*Column. aqu. t. 53. f. 2.*—*Bonan. recr. 3. t. 115.*—*Rumph. mus. t. 30. f. M.*—*Gualt. test. t. 58. f. A.*—*Argenv. conch. t. 14. f. D.*—*Adans. seneg. 1. t. 10. f. 6.*—*Seb. mus. 3. t. 56. f. 40.* Habitat in O. Europæo.

1240. VARIEGATUS. 646. T. testa turrita, anfractibus planiusculis: striis septem obsoletis. *Bonan. recr. 3. t. 112.*—*Seb. mus. 3. t. 56. f. 26, 34, 31, 33.* Habitat . . .

1240. UNGULINUS. 647. T. testa turrita: anfractibus striis decem exoletis. Habitat in O. Europæo.

1240. ANNULATUS. 648. T. testa turrita: anfractuum sutura marginata prominente.† *Gualt. test. t. 58. f. L.* Habitat . . .

1240. BIDENS. 649. T. testa turrita pellucida: anfractibus contra-

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TURRICULÆ auctorum genus non constituunt, sed militant sub Murice, Strombo, Buccino, Trocho, Turbine.

riis, sutura subcrenata, apertura postice bidentata. *Bonan. recr.* 3. t. 41. *Aucta*.—*Gualt. test.* t. 4. f. C. Habitat in Europæ australi: terrestres.

1240. PERVERSUS. 650. T. testa turrita pellucida: anfractibus contrariis, apertura edentula. *Fn. suec.* 2172.\*—*List. angl.* 124. t. 2. f. 11. Habitat in Europæ muscosis; terrestres.

1240. MUSCORUM. 651. T. testa ovata obtusa pellucida: anfractibus senis secundis, apertura edentula. *Fn. suec.* 2173.\*—*It. cel.* 99. —*List. angl.* 121. t. 2. f. 6. Habitat in Europæ muscosis; terrestres.

1240. AURISCALIUM. 652. T. testa turrita alba lævissima, apertura labio porrecto planiusculo concavo obtuso. *Argenv. conch.* t. 32. f. 19? Habitat in M. Mediterraneo. *F. Logie.* Testa subulata, lactea, glaberrima, 7 s. 8 spirarum. Apertura dilatata, auriscaliump referens; labro porrecto, obtuso, concavo, marginato.

1241. POLITUS. 653. T. testa turrita imperforata glaberrima, apertura ovata. Habitat in M. Mediterraneo. Testa gr. Hordei magnitudine, albissima, opaca nec pellucida, nitidissima, anfractibus linea excavata tenui interstinctis.

1241. NAUTILEUS. 654. Testa planiuscula anfractibus annulatis dorso cristatis.† *Syst. nat.* 10. p. 709. n. 234. *Nautilus crista*.—*Act. Helv.* 4. p. 214. t. 9. f. 21, 22.—*Ræs. ins.* 3. p. 599. t. 97. f. 7. Habitat in Ceratophyllo Germaniæ, Helvetiæ; minutus.

328. HELIX. Animal Limax. Testa univalvis, spiralis, subdiaphana, fragilis. Apertura coarctata, intus lunata s. subrotunda: segmento circulo dempto.

\* *Ancipites, testa longitudinaliter utrinque angulata.*

1241. SCARABÆUS. 655. H. testa ovata subancipiti, apertura dentata. *M. L. U.* 663. n. 361.\*—*List. conch.* 4. s. 5. c. 5. t. 1. f. 1, 2.—*Bonan. recr.* 3. t. 385.—*Rumph. mus.* 91. t. 27. f. I. *Cochlea imbricum*.—*Pet. gaz.* t. 4. f. 10.—*Gualt. test.* t. 4. f. S.—*Argenv. conch.* t. 12. f. T.—*Klein. ostr.* t. 1. f. 23. Habitat in Asiæ montibus.

\*\* *Carinata, anfractibus margine acuto.*

1241. LAPICIDA. 656. H. testa carinata umbilicata utrinque convexa, apertura marginata transversali ovata. *Fn. suec.* 2174.\*—*M. L. U.* 362.\*—*It. vgoth.* 27.—*List. angl.* 126. t. 2. f. 14. Habitat in Europæ rupibus terrestribus; ut Larvæ lignum, sic calcem rodens.

1242. OCLUS-CAPRI. 657. H. testa subcarinata umbilicata convexa, apertura marginata. *M. L. U.* 664. n. 363.\*—*Rumph. mus.* t. 27. f. O?—*Argenv. conch.* t. 11. f. F.—*Pet. gaz.* t. 76. f. 6. Habitat in Asiæ arboribus.

1242. ALBELLA. 658. H. testa carinata umbilicata planiuscula,

subtus gibba, apertura semicordata. *Fn. suec.* 2175.\*—*It. cel.* 65.—*Gualt. test. t. 3. f. Q.* Habitat in Europæ rupibus.

1242. STRIATULA. 659. H. testa subcarinata umbilicata convexa striata, subtus gibbosiore, apertura subrotundo-lunata. Habitat Algeriæ. *E. Brander.* Testa grisea anfractibus transverse striatis. Umbilicus patulus.

1242. ALGIRA. 660. H. testa subangulata umbilicata convexa: anfractibus senis, umbilico pervio. Habitat in Mauritania. *E. Brander.* Differt a priori anfractibus 6, nec 4; umbilico patentissimo, nec tenui; anfractuum angulo obsoleto, nec patulo.

1242. LEUCAS. 661. H. testa subcarinata umbilicata convexa lævi, subtus gibbosa, umbilico minutissimo, apertura subrotundo-lunata. Habitat in Africa. *E. Brander.* Testa albida; supra fascia, subtus lineis purpurascentibus.

1242. PLANORBIS. 662. H. testa subcarinata umbilicata plana, supra concava, apertura oblique ovata utrinque acuta. *Fn. suec.* 2176.\*—*List. angl.* 145. t. 3. f. 27; *conch.* 2. t. 138. f. 42.—*Pet. gaz. t. 10. f. 11.*—*Gualt. test. t. 4. f. EE.*—*Klein. ostr. t. 1. f. 8.* Habitat in Europæ stagnis.

1242. COMPLANATA. 663. H. testa deorsum carinata umbilicata convexa: subtus plana, apertura semicordata. *Fn. suec.* 2177.\* Habitat in Europæ aquis dulcibus.

1243. RINGENS. 664. H. testa subcarinata imperforata convexa, apertura resupinata: labio postice quadruplicato. *Bonan. recr. 3. t. 330.*—*Argenv. conch. t. 32. f. 13.* Habitat . . . e Museo Tessiniano. Testa magnitudine H. lapidicæ, sed magis convexa, livida, anfractu in medio carinato albo. Apertura H. Carocollæ, extrorsum dilatato-marginata, elongata. Labio postico intus plicis 4, antico duabus.

1243. CAROCOLLA. 665. H. testa carinata imperforata utrinque convexa. *M. L. U.* 664. n. 364.\*—*Argenv. conch. t. 11. f. D.* *Lucerna antiqua.* Habitat . . . terrestris. Simillimus H. Lapidicæ, sed magnitudine volæ manus, nec ut illa, tantum extimi digiti.

1243. CORNU-MILITARE. 666. H. testa subcarinata imperforata convexa, apertura patulo-marginata. *M. L. U.* 665. n. 365.\*—*Gualt. test. t. 3. f. I.* Habitat . . . ; terrestris. Testa alba apertura fulva quasi e pigmento illito.

1243. VORTEX. 667. H. testa carinata, supra concava, apertura ovali plana. *Fn. suec.* 2172.\*—*List. angl.* 145. t. 2. f. 28.—*Gualt. test. t. 4. f. GG.* Habitat in Europæ stagnis.

1243. SCABRA. 668. H. testa subcarinata imperforata ovata acuminata striata. Habitat . . . Testa fasciis fuscis dissectis: in inferiore anfractu linea elevata.

1243. GOTHICA. 669. H. testa carinata utrinque convexa cornea, fasciis subferrugineis. Habitat in Sueciæ nemoribus.

1243. GUALTIERANA. 670. H. testa carinata imperforata depressa decussatim striata, apertura utrinque acuta. *Gualt. test. t. 68. f. E.* Habitat . . .

\*\*\* *Rotundatæ anfractibus et umbilicatæ.*

1243. CORNEA. 671. H. testa supra umbilicata plana nigricante, anfractibus quatuor teretibus. *Fn. suec. 2179.\* — M. L. U. 665. n. 366.\* — List. angl. 143. t. 2. f. 26; exercit. 2. p. 59. — Gualt. test. t. 4. f. DD. — Argenv. conch. t. 31. f. 7. c.* Habitat in Europæ aquis dulcibus.

1244. SPIRORBIS. 672. H. testa utrinque concava plana albida, anfractibus quinque teretibus. *Fn. suec. 2180.\** Habitat in Europæ lacubus, magnitudine sem. Anethi.

1244. CONTORTA. 673. H. testa subumbilicata plana utrinque æquali, apertura lineari arcuata. *Fn. suec. 2181.\** Habitat in Europæ stagnis supra plantas.

1244. CORNU-ARIETIS. 674. H. testa umbilicata planiuscula, apertura ovali. *M. L. U. 666. n. 367.\* — List. conch. t. 136. f. 40. Cochlea marina compressa. — Klein. ostr. t. 1. f. 7. — Seb. mus. 3. t. 39. f. 14, 15.* Habitat in Europa; fluviatilis. Alba cingulis duobus ferrugineis.

1244. HISPIDA. 675. H. testa umbilicata convexa hispida diaphana, anfractibus quinque, apertura subrotundo-lunata. *Fn. suec. 2182.\** Habitat in Suecia; terrestres.

1244. AMPULLACEA. 676. H. testa subumbilicata subglobosa glabra, anfractibus supra ventricosioribus, umbilico subobtecto, apertura ovato-oblonga. *M. L. U. 666. n. 368.\* — Rumph. mus. t. 27. f. Q. — Gualt. test. t. 1. f. R. — Seb. mus. 3. t. 38. f. 1-5, 58, 59.* Habitat in Asia; terrestres.

1244. POMATIA. 677. H. testa umbilicata subovata obtusa decolore, apertura subrotundo-lunata. *Fn. suec. 1283. — Bonan. recr. pag. 221. cum figur. — Gesn. aqu. 255. Pomatia. — Aldr. exsang. 389. Cochlea terrestris gypso obserata. — List. angl. 111. t. 2. f. 1. — Swamm. bibl. t. 4. f. 2. — Gualt. test. t. 1. f. A. — Argenv. conch. t. 32. f. 1. Pomatia.* Habitat in Angliæ, Galliæ nemoribus.

1245. GLAUCA. 678. H. testa umbilicata subrotunda acuminata, labro marginato, apertura ovali. *M. L. U. 668. n. 369.\** Habitat . . .

1245. CITRINA. 679. H. testa umbilicata convexa obtusa flavescens: fascia fusca. *M. L. U. 667. n. 370.\* — Gualt. test. t. 2. f. D. — Argenv. conch. t. 32. f. 10. — Seb. mus. 3. t. 39. f. 1-6.* Habitat in Jamaica australi; terrestres.

1245. ARBUSTORUM. 680. H. testa umbilicata convexa acuminata, apertura suborbiculari bimarginata: antice elongata. *Fn. suec. 2184.\* — M. L. U. 668. n. 371.\* — List. angl. 119. t. 2. f. 4; conch. 1. n. 52. — Argenv. conch. t. 32. f. 8.* Habitat in Europæ arbustis.

1245. ZONARIA. 681. H. testa umbilicata convexa depressiuscula, apertura oblongiuscula marginata. *Gualt. test. t. 3. f. L. LL.* Habitat in Europa australi; terrestris. Testa magnitudine H. nemoralis, anfractibus 4, convexa, spira depressiuscula, alba aut flavescens; ventre fasciis 2, spira vero unica ferruginea. Apertura extrorsum oblonga, margine patente. Umbilicus ad apicem usque perforatus.

1245. UNGULINA. 682. H. testa umbilicata convexa, apertura marginata suborbiculata: supra elongata. *M. L. U. 668. n. 372.\*—Rumph. mus. t. 27. f. R. Lapillus.—Pet. gaz. t. 1. f. 6. Planorbis indica.—Klein. ostr. t. 1. f. 11.* Habitat in India.

1245. ITALA. 683. H. testa umbilicata convexa obtusa, anfractibus 5 teretibus, umbilico patulo, apertura suborbiculata. Habitat in Europa australi; terrestris. Testa albida, fascia una fusca; magnitudo Coryli.

1245. LUSITANICA. 684. H. testa umbilicato-perforata convexa obtusa, anfractibus quinque teretibus flavescenti-albidis, umbilico patulo. *Gualt. test. t. 2. f. T.* Habitat in Europa australi; terrestris. Magnitudo minoris Pomi, alba absque fascia, dorso levissime flavescens. Anfractus rotundi angulo omnino obsoleto, ubi anfractus superne affigendi.

1246. MAMMILLARIS. 685. H. testa umbilicata ovata, anfractibus tribus striatis, apertura ovata apici adnata. *Argenv. conch. t. 31. f. lin. 2. n. 7. Nimis mucronata.* Habitat in Africæ fluviis. Testa similis Neritæ mammillæ, sed transverse confertim subtilissime, longitudinaliter vero remotius striata. Apertura magna, ovata labro interiore antice anfractui adnato.

1246. HISPANA. 686. H. testa umbilicata convexa, anfractibus 5 teretibus, umbilico tenui-perforato, apertura suborbiculata. Habitat in Europa australi. Testa colore corneo.

1246. LUTARIA. 687. H. testa umbilicata ovato-oblonga: interne coloratiore, apertura subovata. *M. L. U. 669. n. 373.\** Habitat . . .

\*\*\* Rotundatæ, imperforatæ.

1246. PERVERSA. 688. H. testa subumbilicata ovato-oblonga contraria sulphurea. *M. L. U. 669. n. 374.\*—Grew mus. t. 10. f. 9.—Bonan. recr. 3. t. 116.—Pet. gaz. t. 44. f. 7.—Gualt. test. t. 5. f. P, O.—Argenv. conch. t. 12. f. G. Unique.* Habitat . . . fluviatilis. Variat colore flavo et corneo.

1246. IANTHINA. 689. H. testa subimperforata subrotunda obtusa diaphana fragilissima, apertura postice dilatata, labro emarginato. *M. L. U. 670. n. 375.\*—Columnn. aquat. 23. t. 22. purp. 13. f. 2.—Bonan. recr. 3. t. 5.—Sloan. jam. t. 1. f. 4, et t. 572. f. 23.—Rumph. mus. t. 20. f. 2.—Gualt. test. t. 64. f. O.—Act. angl. 301. p. 2051. Cochlea colore speciosior.—Brown. jam. 399. t. 39. f. 1. Cochlea purpurea tenuis, ore ampliore.* Habitat in Europa, Asia, Africa; in M. Mediter-

raneo frequentior; etiam pelagica. Animalculum vivum madet sanie violacea, manus attrahentis inficiente.

1247. VIVIPARA. 690. H. testa imperforata subovata obtusa cornea: cingulis fuscatis, apertura suborbiculari. *Fn. suec.* 2185.\*—*List. angl.* 133. t. 2. f. 18; *exerc.* 2. p. 17. t. 2; *conch.* 2. t. 126. f. 26.—*Gualt. test. t.* 5. f. 1.—*Swamm. bibl. t.* 9. f. 3.—*Seb. mus.* 3. t. 38. f. 12. Habitat in Europæ stagnis, argillosis imprimis.

1247. NEMORALIS. 691. H. testa imperforata subrotunda lævi diaphana fasciata, apertura subrotundo-lunata. *Fn. suec.* 2186.—*M. L. U.* 670. n. 376.\*—*It. æl.* 127.—*It. wgoth.* 84.—*List. angl.* 116. t. 2. f. 3; *conch. t.* 1. n. 53.—*Pet. mus.* 5. n. 14.—*Gualt. test. t.* 1. f. P. Habitat in Europæ arboribus.

1247. LUCORUM. 692. H. testa imperforata subrotunda lævi fasciata, apertura oblonga fusca. *Gualt. test. t.* 1. f. C. Habitat in Europæ arboribus.

1247. GRISEA. 693. H. testa imperforata subovata obtusa grisea: fasciis duabus pallidis, apertura oblongiuscula. *Gualt. test. t.* 1. f. B. Habitat in Europa australi; terrestres. Suecica triplo minor australi.

1247. HÆMASTOMA. 694. H. testa imperforata subrotunda fusca: fascia longitudinali alba, apertura purpurea. *M. L. U.* 671. n. 377.\* Habitat . . .

\*\*\*\*\* *Turritæ.*

1247. DECOLLATA. 695. H. testa imperforata turrita: spira mutilato-truncata, apertura obovata. *M. L. U.* 671. n. 378.\*—*Bonan. recr.* 3. t. 56.—*Pet. gaz. t.* 66. f. 1.—*Gualt. test. t.* 4. f. O, P, Q.—*Argenv. conch. t.* 31. f. 5. Habitat in Europa australi, oriente; terrestres. Testa apice transversim abscissa et consolidata est.

1248. SUBCYLINDRICA. 696. H. testa imperforata turrita subcylindrica obtusa, anfractibus quatuor, apertura ovali. Habitat in aquis dulcibus Europæ borealis. Testa magnitudine grani Secalis, cornea, pallida. Anfractus 4. Apex obtusissimus, rotundatus. Umbilicus nullus. Apertura ovalis, margine interiore reflexo.

1248. STAGNALIS. 697. H. testa subperforata subturrita, anfractibus quinque apertura ovata. *Baster. subs.* 2. p. 77. t. 7. f. 4. *Turbo stagnalis.* Habitat in aquis dulcibus. *D. Baster.* Testa magnitudine vix grani Secalis, cornea, pallida, ovato-oblonga, acutiuscula. Umbilicus adeo parvus ut fere nullus. Apertura ovata marginata.

1248. OCTONA. 698. H. testa subperforata turrita, anfractibus octo, apertura subrotunda. *Gualt. test. t.* 6. f. BB. Habitat in Sueciæ subpaludosis. Testa magnitudine grani Secalis, cornea. Umbilicus adeo obsolete perforatus, ut vix constet utrum vere perforatus dicendus. Apertura fere orbiculata.

1248. PELLA. 699. H. testa imperforata ovata acuminata transverse

striata fusca: fasciis flavis. Habitat in Islandia. *Zoega*. Testa ovato-oblonga, decumbens, magnitudine *Lithospermi seminis*, fusco-ferruginea, anfractibus transverse striatis. Fascia in primo anfractu duplex; in reliquis simplex ad eorum basin. Apertura semiovata.

\*\*\*\*\* *Ovatæ, imperforatæ.*

1248. PUPA. 700. H. testa subimperfiorata ovato-oblonga rudi, anfractibus senis, apertura lunato-oblonga. Habitat in Mauritania. *E. Brander*.

1249. BARBARA. 701. H. testa imperfiorata oblonga rudi, anfractibus octonis, apertura subrotundo-lunata. Habitat Algeriæ. *E. Brander*. Testa præcedenti similis, sed dimidio minor, s. *Hordei semine paulo major*; infima apertura subtus sæpe fascia grisea cincta.

1249. AMARULA. 702. H. testa imperfiorata oblonga, anfractibus spinoso-dentatis. *M. L. U.* 672. n. 379.\*—*Rumph. mus. t.* 33. f. FF. *Voluta fluviatilis*.—*Argenv. conch. t.* 31. f. 6. β. Habitat in Asiæ fluviis.

1249. STAGNALIS. 703. H. testa imperfiorata ovato-subulata subangulata, apertura ovata. *Fn. suec.* 2188.\*—*Pet. mus.* 82. n. 85.—*List. angl.* 137. t. 2. f. 21; *conch. t.* 123. f. 21.—*Gualt. test. t.* 5. f. I.—*Frish. ins.* 8. t. 7.—*Act. Helv.* 5. p. 283. n. 4. t. 3. f. 25, 26. Habitat in Europæ stagnis.

1249. FRAGILIS. 704. H. testa imperfiorata ovato-subulata tereti pellucida, apertura ovato-oblonga. *Fn. suec.* 2187.\* Habitat in Europa.

1249. PUTRIS. 705. H. testa imperfiorata ovata obtusa flava, apertura ovata. *Fn. suec.* 2189.\*—*Bonan. recr.* 6. t. 54?—*Tulp. obs.* 210. t. 201.—*List. angl.* 140. t. 2. f. 24; *conch. t.* 123. f. 23.—*Klein. ostr. t.* 3. f. 70.—*Gualt. test. t.* 5. f. 5. Habitat in Europæ stagnis.

1249. LIMOSA. 706. H. testa imperfiorata oblongiuscula pellucida acuta, apertura ovata. *Fn. suec.* 2190.—*Gualt. test. t.* 5. f. H. Habitat in Europæ paludibus.

1249. TENTACULATA. 707. H. testa imperfiorata ovata obtusa impura, apertura subovata. *Fn. suec.* 2191.\*—*Bonan. recr.* 3. t. 201.—*List. angl.* 135. t. 2. f. 19; *conch.* 642. f. 33–35.—*Klein. ostr. t.* 2. f. 53, 54.—*Adans. seneg.* 1. t. 12. f. 1. Habitat in Europæ stagnis.

1250. AURICULARIA. 708. H. testa imperfiorata ovata obtusa, spira acuta brevissima, apertura ampliata. *Fn. suec.* 2192.—*Gualt. test. t.* 5. f. F.—*List. angl.* 139. t. 2. f. 23; *exerc.* 2. p. 54; *conch. t.* 123. f. 32.—*Argenv. conch. t.* 31. f. 7. bona.—*Klein. ostr.* 54. t. 3. f. 69.—*Act. helv.* 5. p. 283. n. 5. t. 3. f. 27, 28. Habitat in Europæ fluviis, stagnis.

1250. LÆVIGATA. 709. H. testa imperfiorata obovata obtusissima



pellucida lævissima. Habitat . . . Testa magnitudine Pisi, pellucida, lævissima, nitida, obovata, obtusissima. Umbilicus vix ullus. Apertura magna, sublunata, postice elongata. Color cornu striis obsoletis, longitudinalibus, obscurioribus; labio interiore albo.

1250. BALTHICA. 710. H. testa imperforata ovata acuminata, rugis elevatis, apertura ovata ampliata. *Fn. suec.* 2193.\*—*It. gott.* 261. Habitat ad M. Balthici littora.

1250. NERITOIDEA. 711. H. testa imperforata convexa longitudinaliter striata, rima umbilicali, apertura subrotunda. *M. L. U.* 672. n. 380.\*—*Gualt. test. t.* 64. f. I. Habitat . . . Testa livida.

1250. PERSPICUA. 712. H. testa imperforata convexo-ovata, labro nullo, apertura ad apicem usque hiantē. *M. L. U.* 673. n. 381.\* Habitat in M. Mediterraneo. Testa lactea, pellucida, in apicem usque perspicua, ut *Haliotis*, sed tragus non perforatus; inter *Helices* et *Bullas* media.

1250. HALIOTOIDEA. 713. H. testa imperforata depresso-planiuscula striis undatis, apertura ovali dilatata usque in apicem. *M. L. U.* 673. n. 382.\*—*Pet. gaz. t.* 12. f. 4.—*Rumph. mus. t.* 40. f. R.—*Gualt. test. t.* 69. f. F.—*Argenv. conch. t.* 7. f. D, C.—*List. conch. t.* 570. f. 21.—*Bonan. kirch.* 475. n. 404.—*Klein. ostr. t.* 7. f. 114.—*Adans. seneg. t.* 2. f. 2. Habitat in M. Mediterraneo, Americano, Asiatico.

1251. AMBIGUA. 714. H. testa subimperforata convexa: sulcis remotis compressis, apertura semiorbiculari. *Adans. seneg.* 1. t. 13. f. 1. Habitat in M. Mediterraneo. Testa parva Neritæ, alba, convexa; spira lateralis, obtusa, tota cingitur lineis remotis 6 ad 8 compressis, elevatis: apertura semiorbiculata, hinc etiam Nerita, modo labium interius non esset reflexum; umbilicus perforatus est in junioribus, in adultioribus vero nullus.

329. NERITA. Animal *Limax*. Testa univalvis, spiralis, gibba, subtus planiuscula. Apertura semiorbicularis: labio columellæ transverso, truncato, planiusculo.

\* *Umbilicatæ.*

1251. CANRENA. 715. N. testa umbilicata lævi, spira submucronata, umbilico gibbo bifido. *M. L. U.* 674. n. 383.\*—*Bonan. recr. t.* 224, 228.—*Rumph. mus. t.* 22. f. C. *Valvata*.—*Gualt. test. t.* 67. f. E, Q, R, S, V, X.—*Argenv. conch. t.* 10. f. C.—*Regenf. conch.* 10. t. 3. f. 34.—*Adans. seneg.* 1. t. 13. f. 3. Habitat in O. Asiæ, Africæ.

1251. GLAUCINA. 716. N. testa umbilicata lævi, spira obtusiuscula, umbilico semiclauso: labio gibbo dicolorē. *Fn. suec.* 2197.\*—*M. L. U.* 674. n. 384.\*—*Rumph. mus. t.* 22. f. A. *Valvata lævis*.—*Gualt. test. t.* 67. f. M, P, T.—*List. angl.* 163. t. 3. f. 10.—*Adans. seneg.* 1. t. 13. f. 14. Habitat in O. Europæo, Africano.

1252. VITELLUS. 717. N. testa umbilicata subglobosa, umbilico

perforato æquali. *Rumph. mus. t. 22. f. D. Valvata 5. Habitat in O. Asiæ.*

1252. ALBUMEN. 718. N. testa umbilicata convexa, umbilico subcordato: lobo explanato. *M. L. U. 675. n. 385.\*—List. conch. 4. s. 5. c. 3. f. 1, 2.—Rumph. mus. t. 22. f. B. Vitellus compressus.—Gualt. test. t. 67. f. A, B.—Argenv. conch. t. 10. f. T.—Regenf. conch. 20. t. 5. f. 54. Habitat in O. Asiæ.*

1252. MAMMILLA. 719. N. testa umbilicata ovata glabra, umbilico oblecto, apertura ovata. *M. L. U. 675. n. 386.\*—Column. aqu. t. 52. f. ult. Cochlea nivea.—List. conch. 4. s. 5. c. 3. t. 1. f. 3, 4.—Rumph. mus. t. 22. f. F. Valvata 7. Albula.—Gualt. test. t. 67. f. C, D.—Argenv. conch. t. 10. f. X. Uber tenue.—Seb. mus. 3. t. 38. f. 9, 10. Habitat ad Barbados, Alexandriæ. Umbilicus in aliis perforatus pallida; in aliis crassiusculus, totus oblectus, alba. Labium interius non transversale, sed oblongius est.*

\*\* *Imperforatæ, labio edentulo.*

1252. CORONA. 720. N. testæ anfractibus coronatis spinis, labiis edentulis. *M. L. U. 676. n. 387.\*—Rumph. mus. t. 22. f. O. Valvata spinosa.—Pet. amb. t. 3. f. 4.—Argenv. conch. t. 10. f. 2. Habitat in Asiæ fluviiis.*

1252. RADULA. 721. N. testa sulcata tuberculis æqualibus, labiis edentulis. *M. L. U. 676. n. 388.\* Habitat . . .*

1253. CORNEA. 722. N. testa obsolete striata, labiis edentulis. *M. L. U. 677. n. 389.\*—Argenv. conch. t. 10. f. M. Habitat . . .*

1253. FLUVIATILIS. 723. N. testa rugosa, labiis edentulis. *Fn. suec. 2194.\*—List. angl. 136. t. 2. f. 20; conch. 2. p. 1. t. 38.—Pet. mus. 67. n. 718. Habitat in Europæ cataractis.*

1253. LITTORALIS. 724. N. testa lævi, vertice carioso, labiis edentulis. *Fn. suec. 2195.\*—It. æl. 261.—List. angl. 164. t. 2. f. 3; conch. t. 4. s. 8. f. 39.—Pet. mus. 67. n. 717.—Gualt. test. t. 4. f. LL. Habitat ad Maris Europæi littora scopulosque, modis innumeris variegata; eadem minor in lacubus dulcibus.*

1253. LACUSTRIS. 725. N. testa læviuscula cornea, apice exquisito, labiis edentulis. *Fn. suec. 2196.—Gualt. test. t. 4. f. MM. Habitat in Europæ lacubus et fontibus calidis. Testa similis N. littorali, sed cornea, nec vertice carioso.*

\*\*\* *Imperforatæ, labio dentato.*

1253. PULLIGERA. 726. N. testa lævi rudi, spirula excavato-oculata, labio interiore lævi crenulato. *Rumph. mus. 76. t. 22. f. H. Valvata 10 fluviatilis. Habitat in Indiæ fluviiis; pullos in dorso testæ gerit. Testa similis fluviatili, sed quadruplo major rudis, fusca s. cornea, læviuscula, opaca. Spiræ locus margine prominulo acuto cinctus et excavatus. Faux pallida, flavicans absque striis. Labium interius*

planum, crenulatum. Dorsum testæ sæpe notatum cicatricibus pallidis ovalibus, margine albo cinctis, a casu pullorum, qui supra dorsum excluduntur.

1253. PUPA. 727. N. testa lævi subrotunda lactea, anfractuum striis transversis nigris parallelis. Habitat . . . Media inter N. littoralem et virgineam; magnitudo N. littoralis. Labium omnino planum et lævissime dentatum. Testa lactea; striis anfractuum nigris transversis obliquis distantibus.

1254. BIDENS. 728. N. testa lævi viridi, labio interiore bidentato. *M. L. U.* 677. n. 309.\* Habitat . . .

1254. VIRIDIS. 729. N. testa lævi viridi, labio interiore medio crenulato. *Brown, jam.* 399. *N. minima viridis.* Habitat ad Minorcam, Jamaicam. *E. Brander.* Testa parva admodum, viridis interdum fusco lacteoque undata, ad labium albo maculata.

1254. VIRGINEA. 730. N. testa lævi ovata, labio interiore gibbo denticulato. *M. L. U.* 678. n. 391.\*—*Bonan. recr.* 3. t. 204.—*Pet. gaz.* t. 11. f. 3.—*Argenv. conch.* t. 10. f. P. Habitat in M. Mediterraneo.

1254. POLITA. 731. N. testa lævi, vertice oblitterato, labiis utrisque dentatis. *M. L. U.* 678. n. 392.\*—*Bonan. recr.* 3. t. 221.—*Rumph. mus.* t. 22. f. I, 2. *Valvata alpina.*—*Gualt. test.* t. 66. f. G.—*Argenv. conch.* t. 10. f. K.—*Regenf. conch.* 16. t. 4. f. 43.—*Seb. mus.* 3. t. 59. f. 1–3. Habitat in O. Asiæ.

1254. PELORONTA. 732. N. testa striata, labiis dentatis: interiore planiusculo rugoso. *M. L. U.* 679. n. 393.\*—*Rumph. mus.* t. 22. f. K. *Valvata 2 fasciata.* Habitat in O. Asiæ ad Bandam.

1254. ALBICILA. 733. N. testa striata, labiis subdentatis: interiore tuberculato. *M. L. U.* 679. n. 394.\*—*Rumph. mus.* t. 22. f. 8. Habitat ad Hitoe.

1254. HISTRIO. 734. N. testa sulcata transverseque striata, labio interiore dentato. *M. L. U.* 680. n. 395.\*—*Rumph. mus.* t. 22. f. 6. Habitat . . .

1255. PLICATA. 735. N. testa sulcata, labiis dentatis: interiore rotundato; exteriore utrinque dentibus acutis conicis. *M. L. U.* 680. n. 396.\* Habitat . . .

1255. GROSSA. 736. N. testa sulcata, labiis dentatis: interiore convexo rugoso. *M. L. U.* 681. n. 397.\*—*Rumph. mus.* t. 22. f. N.—*Gualt. test.* t. 66. f. V. Habitat in O. Asiæ.

1255. CHAMÆLEON. 737. N. testa sulcata sulcis viginti, labiis dentatis: interiore rugoso tuberculato. *M. L. U.* 681. n. 398.\*—*Rumph. mus.* t. 22. f. L. *Valvata 3 undulata.*—*Argenv. conch.* t. 10. f. Q.—*Regenf. conch.* 12. t. 3. f. 26. Habitat in O. Asiæ ad Bandam.

1255. UNDATA. 738. N. testa sulcata sulcis triginta, labiis dentatis:

interiore rugoso tuberculato. *M. L. U.* 682. n. 399.\*—*Rumph. mus. t. 22. f. 4.*—*Gualt. test. t. 66. f. X.* Habitat in O. Asiæ ad Amboinam. Differt a præcedenti etiam apice magis prominente, et fasciis latiusculis, nec tenuibus.

1255. EXUVIA. 739. N. testa sulcata, labiis dentatis: interiore tuberculato. *M. L. U.* 682. n. 400.\*—*Bonan. recr. 3. t. 220.*—*List. conch. 4. s. 1. c. 1. t. 2. f. 5.*—*Rumph. mus. t. 22. f. M.*—*Pet. gaz. t. 100. f. 6.*—*Gualt. test. t. 66. f. CC.*—*Argenv. conch. t. 10. f. I.*—*Seb. mus. 3. t. 59. f. 4–9.* Habitat in O. Americæ et Asiæ.

330. HALIOTIS. Animal Limax. Testa auriformis, patens. Spira occultata, laterali. Disco longitudinaliter poris per-tuso.

1255. MIDÆ. 740. H. testa subrotunda utrinque nitida. *M. L. U.* 683. n. 401.\*—*Gualt. test. t. 69. f. B.* Habitat . . .

1256. TUBERCLATA. 741. H. testa subovata, dorso transversim rugoso tuberculato. *Fn. suec. 2198.*—*Fn. suec. 1326.* *Haliotis striata rugosa.*—*Rond. pisc. 5. Auris marina.*—*Bell. aquat. 395.*—*Gesn. aqu. 808 et 807.* *Patella major s. fera.*—*Aldr. exsangu. 551. f. 1, 2.*—*Rumph. mus. t. 40. f. G, H.*—*Bonan. recr. 1. t. 10, 11.*—*List. angl. 167. t. 3. f. 16; conch. t. 611. f. 2–6.*—*Ginan. adr. 2. t. 3. f. 27.*—*Adans. seneg. 1. t. 2. f. 1.* Habitat in O. Europæo.

1256. STRIATA. 742. H. testa ovata ferruginea transversim rugosa longitudinaliter striata. *M. L. U.* 684. n. 403.\* Habitat in O. Asiæ.

1256. VARIA. 743. H. testa ovata, striis longitudinalibus; maioribus tuberculatis. *M. L. U.* 684. n. 404.\* Habitat . . . Margo huic inæqualis, sequenti æqualis, utraque parva.

1256. MARMORATA. 744. H. testa ovalis: striis longitudinalibus; transversis obsoletis. *M. L. U.* 685. n. 405.\*—*Argenv. conch. t. 7. f. B.* Habitat in O. Africano.

1256. ASININA. 745. H. testa læviuscula oblonga margine subfalcato, dorso nervis elevatis. *M. L. U.* 685. n. 406.\*—*Rumph. mus. t. 40. f. E, F.*—*Gualt. test. t. 69. f. D.*—*Argenv. conch. t. 7. f. E.*—*Re-genf. conch. t. 9. f. 20.* Habitat in O. Indiæ.

1256. PARVA. 746. H. testa ovata rubra, ventre angulo elevato. *M. L. U.* 686. n. 407.\* Habitat in O. Africano.

Haliotides præcedentes valde affines et forte omnes tantum varietates.

331. PATELLA. Animal Limax. Testa univalvis, subconica, absque spira.

\* *Labiata s. labio interno instructæ.*

1257. EQUESTRIS. 747. P. testa integra orbiculata extus perfoliata,

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HALIOTIDES simillimæ, ideoque et synonymis obscuriores.

labio fornicali perpendiculari. *M. L. U.* 687. n. 408.\*—*Rumph. mus. t. 40. f. P, Q.*—*Pet. amb. t. 16. f. 28.*—*Gualt. test. t. 9. f. X.*—*Argenv. conch. t. 6. f. K.* *Cabochon.* Habitat in O. Indico.

1257. NERITOIDEA. 748. P. testa integra ovata apice subspirali, labio laterali. *M. L. U.* 688. n. 409.\* Habitat . . .

1257. CHINENSIS. 749. P. testa integra subconica lævi, labio sublaterali. *M. L. U.* 688. n. 410.\*—*Bonan. recr. 1. t. 12.*—*List. conch. 4. s. 1. c. 7. f. 3.*—*Argenv. conch. t. 6. f. F.* *Mitella chinensis.* Habitat in M. Mediterraneo.

1257. PORCELLANA. 750. P. testa integra ovali, apice recurvo, labio postico plano. *M. L. U.* 689. n. 411.\*—*Rumph. mus. t. 40. f. O.* Habitat in O. Indiæ.

1257. FORNICATA. 751. P. testa integra ovali postice oblique recurva, labio postico concavo. *List. conch. t. 545. f. 34.*—*Argenv. conch. t. 6. f. N.*—*Adans. seneg. 1. t. 2. f. 8.* Habitat ad Ilvam insulam, inque M. Mediterraneo passim. Differt a præcedenti spira laterali, labioque concavo albo.

\*\* *Dentatæ, basi s. margine angulatæ.*

1257. CREPIDULA. 752. P. testa ovali planiuscula lævi, labio postico plano. *M. L. U.* 689. n. 412.\*—*Gualt. test. t. 69. f. H.* *Crepidula michelii.*—*Adans. seneg. 1. t. 1. f. 1.* *Cymbium.* Habitat in M. Mediterraneo, imprimis ad Barbariam.

1258. LACINIOSA. 753. P. testa radiis elevatis inæqualibus: extus crassioribus obtusis. *Rumph. mus. t. 40. f. C.*—*Argenv. conch. t. 6. f. O.* Habitat in India.

1258. SACCHARINA. 754. P. testa angulata: costis septenis carinatis obtusis. *M. L. U.* 690. n. 413.\*—*Bonan. kirch. 1. t. 32.*—*List. conch. 4. s. 1. c. 3. t. 1. f. 1, 2.*—*Rumph. mus. t. 40. f. B.*—*Pet. amb. t. 3. f. 3.*—*Gualt. test. 9. f. I, M, O.*—*Argenv. conch. t. 6. f. M.* *Asterolepas.*—*Klein. ostr. t. 8. f. 4.* Habitat ad Barbados.

1258. BARBARA. 755. P. testa dentata: costis novemdecim elevatis fornicato-muricatis. *M. L. U.* 690. n. 414.\* Habitat . . .

1258. GRANULARIS. 756. P. testa dentata: striis elevatis angulatis imbricatis. *M. L. U.* 691. n. 415.\*—*List. conch. 4. s. 1. c. 3. t. 3. f. 2.*—*Gualt. test. t. 9. f. F.*—*Argenv. conch. t. 6. f. G.*—*Regenf. conch. 8. t. 2. f. 24.* Habitat in O. Europæ australis. Testæ fundus ferrugineus sub centro.

1258. GRANATINA. 757. P. testa angulata: striis numerosis muricatis. *M. L. U.* 691. n. 416.\*—*List. conch. 4. s. 1. c. 3. t. 2. f. 3, 4.*—*Argenv. conch. t. 6. f. H.*—*Regenf. conch. t. 9. f. 31.* Habitat in O. Europæ australis. Testa lutea striarum mucronibus albis.

1258. VULGATA. 758. P. testa subangulata: angulis quatuordecim obsoletis, margine dilatato acuto. *Fn. suec. 2199.\**—*List. angl. 195.*

*t.* 5. *f.* 40, *mala*.—*Gualt. test. t.* 8. *f.* *L.*—*Ginan. adr.* 2. *t.* 2. *f.* 17. Habitat in O. Europæi rupibus, saxis, frequens. Testa subtus colore testudinis.

1259. CÆRULEA. 759. P. testa crosso-subangulata: striis numerosis inæqualibus, subtus cærulea. Habitat in M. Mediterraneo.

1259. TUBERCULATA. 760. P. testa subdentata conica tuberculata; postice retusa. *M. L. U.* 692. *n.* 417.\* Habitat . . .

\*\*\* *Mucronatæ, vertice acuminato recurvo.*

1259. UNGARICA. 761. P. testa integra conico-acuminata striata: vertice hamoso revoluto. *Gualt. test. t.* 9. *f.* *V, W.*—*Klein. ostr. t.* 8. *f.* 10.—*Ginan. adr.* 2. *t.* 3. *f.* 24. Habitat in M. Mediterraneo.

1259. ANTIQUATA. 762. P. testa integra oblonga imbricata, vertice postico recurvato. Habitat . . . Testa opaca, lactea, multum imbricata. Apertura ovata; apex posticus, recurvus.

1259. MAMMILLARIS. 763. P. testa integra conica striata subdiaphana, vertice reflexo lævi. *List. conch. t.* 537. *f.* 17.—*Klein. ostr. t.* 8. *f.* 1. Habitat in M. Mediterraneo.

1259. TRICARINATA. 764. P. testa substriata antice tricarinata, vertice revoluto. Habitat . . . Testa alba, ovata, magnitudine n. Coryli, extus striata, antice carinis 3 distinctis, excurrentibus in marginem inde angulatum. Spira recurvata, postice posita.

1259. PECTINATA. 765. P. testa integra ovata: striis rugosis subramosis, vertice subcentrali reflexo mucronato. Habitat in M. Mediterraneo. Testa opaca; intus lævis testudinea; extus striis numerosis, longitudine inæqualibus.

1260. LUTEA. 766. P. testa integra ovali convexa striata, vertice submarginali reflexo mucronato. *M. L. U.* 692. *n.* 418.\*—*Rumph. mus. t.* 40. *f.* *I.* Habitat in India. Vertex prope marginem exteriorem residet.

1260. UNGUIS. 767. P. testa integerrima oblonga margine antico retusa, vertice mucronato carinato. *M. L. U.* 693. *n.* 419.\*—*Rumph. mus. t.* 40. *f.* *L.*—*Pet. gaz. t.* 32. *f.* 9. Habitat in Amboina ad littora, sub arena.

1260. CRISTATA. 768. P. testa vertice revoluto, dorso cristato carinato. *Brunnich.* Habitat . . . e Museo D. Lyonnet. Testa diaphana, conico-revoluta, compressa, tenuissima: sulcis transversis, numerosis, costarum instar. Dorsum carinatum membrana duplici tenuissima, in crenulas excisa. Limbus testæ sinuatus. Apertura ad dorsum angulo acuto.

1260. LACUSTRIS. 769. P. testa integerrima ovali membranacea, vertice mucronato reflexo. *Fn. succ.* 2200.—*List. angl.* 151. *t.* 2. *f.* 32.—*Gualt. test. t.* 4. *f.* *AA.* Habitat in Europæ aquis dulcibus, adhærens plantis.

\*\*\*\* *Integerrimæ, absque vertice mucronato.*

1260. PELLUCIDA. 770. P. testa integerrima obovata gibba pellucida: radiis quatuor cæruleis. Habitat in M. Mediterraneo, *E. Brander*; in Norvegia, *Martin*. Testa facie P. lacustris, sed major muticaque, livida, glaberrima radiis cæruleis nitidissimis; ad posticum marginem quasi vertex obsoletus. Ex hac patet colorem cæruleum etiam in Cochleis.

1260. TESTUDINARIA. 771. P. testa integerrima ovata lævi glaberrima. *M. L. U.* 693. n. 420.\*—*List. conch.* 4. s. 1. c. 2. t. 2.—*Gualt. test. t. 8. f. B.*—*Argenv. conch. t. 6. f. P.* *Clypeus testudinarius*. Habitat . . .

1261. COMPRESSA. 772. P. testa integerrima ovali oblonga striata lævi dorso compressa. Habitat . . . e Museo Tessiniano. Testa inter maximas generis numeranda, longa digit. 4, lata digit. 3, alta digit. 3, a vertice ad marginem longitudinaliter striata, vix transversim striata, flavesceus.

1261. RUSTICA. 773. P. testa integerrima conica: striis quinquaginta obtusis. *M. L. U.* 694. n. 421.\*—*List. conch.* 4. s. 1. c. 4. t. 1.—*Gualt. test. t. 8. f. P, et t. 9. f. C?* Habitat . . .

1261. FUSCA. 774. P. testa integerrima ovata obtusa: striis elevatis. *M. L. U.* 694. n. 422.\* Habitat . . .

1261. NOTATA. 775. P. testa integra striata: vertice submucronato erecto, intus alba: macula atra cordata medio albida. Habitat in M. Mediterraneo. Testa striis elevatis lævibus fuscis: intus alba margine fusco maculato; sub fornice macula spatulata nigra, medio alba.

1261. CRUCIATA. 776. P. testa integerrima ovali subconvexa fusca cruce alba picta. *M. L. U.* 695. n. 423.\* Habitat . . .

1261. RETICULATA. 777. P. testa integra conica compressa venoso-reticulata. *M. L. U.* 695. n. 424.\* Habitat in M. Mediterraneo.

\*\*\*\*\* *Perforatæ vertice.*

1261. FISSURA. 778. P. testa ovali striato-reticulata, vertice recurvo, antice fissa. *List. conch. t. 543. f. 28.*—*Pet. gaz. t. 75. f. 2.*—*Klein. ostr. 116.* *Patella reticulata exigua alba, fissura notabili in margine.* Habitat ad Angliam rarius, *Lister*; ad Algiriam frequentior, *E. Brander*. Testæ fissura linearis, a margine antico ad lateris medium incisa.

1262. PUSTULA. 779. P. testa ovali gibboso-convexa striato-reticulata, margine crenulato, vertice perforato. *Pet. gaz. t. 3. f. 12.*—*Klein. ostr. t. 8. f. 3.* Habitat in M. Mediterraneo. *Brander*. Testa similima præcedenti, apertura margini postico propior.

1262. GRÆCA. 780. P. testa ovata convexa: margine introrsum crenulato, vertice perforato. *Bonan. recr. 1. t. 6.*—*Tournef. iter. 1. t. 94.*—*List. conch. t. 527. f. 1, 2.*—*Argenv. conch. t. 6. f. I.*—*Klein. ostr.*

*t. 8. f. 3.*—*Adans. seneg. 1. t. 2. f. 7.*—*Gualt. test. t. 9. f. N.*—*Regenf. conch. 6. t. 2. f. 23.* Habitat in M. Mediterraneo.

1262. NIMBOSA. 781. P. testa ovata striata rugosa fusca, vertice oblongo-perforato. *M. L. U. 696. n. 425.\**—*List. conch. 4. s. 1. c. 1. t. 1, 2.* *Gualt. test. t. 9. f. P, Q, R, S, T.*—*Argenv. conch. t. 6. f. C.*—*Column. aqu. 11. t. 12. f. 3.*—*Bonan. recr. 1. n. 3.*—*Pet. gaz. t. 3. f. 11, et t. 85. f. 8.*—*Ginan. adr. 2. t. 2. f. 19.*—*Adans. seneg. 1. t. 2. f. 6.* Habitat in M. Europæ australis, Americæ.

1262. NUBECULA. 782. P. testa subovata rugosa alba rubro radiata, vertice ovato-perforato. Habitat in M. Mediterraneo frequens. Differt a præcedenti testa minore, altiore, alba rubro-radiata, apertura minus oblonga et intus fusca.

332. DENTALIUM. Animal Terebella. Testa univalvis, tubulosa, recta, monothalamia, utraque extremitate pervia.

1263. ELEPHANTINUM. 783. D. testa decem-angulata subarcuata striata. *M. L. U. 699. n. 426.\**—*Bonan. recr. 1. t. 8.*—*List. conch. 4. s. 2. f. 3.*—*Rumph. mus. t. 41. f. I.* *Denticulus elephantis.*—*Pet. amb. t. 16. f. 33; gaz. t. 13. f. 9.*—*Gualt. test. t. 10. f. I.*—*Argenv. conch. t. 7. f. H.* *Dentalis.*—*Ginan. adr. 2. t. 1. f. 1.* Habitat in Oceano Indico, Europæo.

1263. APRINUM. 784. D. testa decem-angulata subarcuata lævi. Habitat in O. Indico. Testa alba D. Elephantino angustior, sulcis profundioribus absque striis.

1263. DENTALIS. 785. D. testa viginti-striata subarcuata interrupta. *Rumph. mus. t. 41. f. 6.* Habitat in M. Mediterraneo. Testæ apex valde acuminatus et ruber est.

1263. ENTALIS. 786. D. testa tereti subarcuata continua lævi. *Fn. suec. 2201.* *M. L. U. 669. n. 427.\**—*Bonan. recr. 1. t. 9.*—*List. conch. 4. s. 2. f. 3.*—*Rumph. mus. t. 41. f. 5.*—*Ginan. adr. 2. t. 1. f. 2.*—*Gualt. test. t. 10. f. F.*—*Argenv. conch. t. 7. f. C.* *Antalis.* Habitat in O. Europæo, Indico.

1263. CORNEUM. 787. D. testa tereti subarcuata interrupta opaca. Habitat in O. Africano. Testa simillima D. Entali, sed cornu colore obscura, sæpius interrupta.

1264. POLITUM. 788. D. testa tereti subarcuata continua: striis annularibus confertissimis. *Gualt. test. t. 10. f. F.* Habitat in Indiis. Simillimum D. Entali, sed lactea, nitida, striis innumeris confertissimis.

1264. EBURNEUM. 789. D. testa tereti subarcuata continua: annulis remotis. Habitat in India. Simillimum D. Entali, eburnæ albedinis, lævissima, nitida: striis convexis, annularibus, numerosissimis, æqualiter remotis.

1264. MINUTUM. 790. D. testa tereti erectiuscula lævi minuta.



*Planc. conch. t. 2. f. 2.* Habitat in M. Mediterraneo. Testa tam parva, ut genus nisi armatis oculis non conspiciatur.

333. SERPULA. Animal Terebella. Testa univalvis, tubulosa, adhærens (sæpe isthmis integris passim intercepta).

1264. SEMINULUM. 791. S. testa regulari ovali libera glabra. *Planc. conch. t. 2. f. 1?*—*Gualt. test. t. 10. f. S.* Habitat in M. Adriatico; minuta. Testa recedit a congeneribus, quod libera sit nec adhæreat aliis corporibus, quamvis anfractus inter se uniti, et quod apertura in mea non conspicua.

1264. PLANORBIS. 792. S. testa regulari orbiculata plana æquali. *Fn. succ. 2102.* Habitat in Conchis pelagicis. Testa vix manifesta, nisi squamula orbiculata arete adnata, absque omni spirarum rudimento externo, at fracta discedens horizontaliter, intus ostendit spiram peregrinæ testæ, cui insidebat, insculptam, tanquam circulos concentricos.

1264. SPIRILLUM. 793. S. testa regulari spirali orbiculata pellucida, anfractibus teretibus sensimque minoribus. *Fn. succ. 2203.*—*Planc. conch. t. 1. f. 8.*—*Ginan. adr. 2. t. 1. f. 7.* Habitat in Oceano super Sertularias et Zoophyta alia. Differt a sequenti, cui simillima, quod triplo minor; quod pellucida, nec opaca; quod ad latus inferius vix manifeste canaliculata; quodque anfractus omnino teretes, nec a latere centrum respiciente obsolete canaliculati.

1265. SPIRORBIS. 794. S. testa regulari spirali orbiculata, anfractibus supra introrsum subcanaliculatis sensimque minoribus. *Fn. succ. 2204.*—*It. wgoth. t. 170.*—*Pet. gaz. t. 35. f. 8.*—*Baster. subs. 1. p. 79. t. 9. f. 3.*—*Planc. conch. 18. n. 3.*—*Gualt. test. t. 10. f. O.*—*Ginan. adr. 2. t. 1. f. 8.*—*List. conch. 4. s. 3. t. 2.* Habitat in Oceani et Pelagi Fucis, Zoophytis.

1265. TRIQUETRA. 795. S. testa repente flexuosa triquetra. *Fn. succ. 2206.\**—*M. L. U. 698. n. 428.\**—*It. wgoth. 170.*—*Gualt. test. t. 10. f. P.*—*E. N. C. 1727. p. 315. t. 10.*—*Baster. subs. 1. t. 9. f. 2.* Habitat in Oceano supra Testas, Lapides, Naves, Fucos.

1265. INTRICATA. 796. S. testa filiformi scabra tereti flexuosa. Habitat in M. Mediterraneo super pinnas aliaque recrementa marina. Testa instar fili tenuioris varie flexa, cinerea, oculo armato valde rudis et fere scabra observanda.

1265. FILOGRANA. 797. S. testis capillaribus fasciculatis ramoso-glomeratis cancellatisque. *Raj. hist. 1. p. 65.* *Reticulatum tophaceum.*—*Bocc. mus. 228. t. 7. f. 2 et t. 2. f. 13.* *Rete marinum.*—*Planc. conch. add. ad. p. 18.* *Tubularia filograna.*—*Seb. mus. 3. t. 100. f. 8.*—*Act. petrop. v. 7. p. 374. t. 16. f. 3.* *Tubipora.*—*Pall. zooph. p. 239.* *Serpula corallifica.* Habitat in M. Mediterraneo. Testæ filiformes, albæ, fasciculatim convexæ in cancellos varios.

1266. GRANULATA. 798. S. testa tereti spirali glomerata, latere

superiore sulcis tribus elevatis. Habitat in O. septentrionali supra lapides et testas. Testæ magnitudine seminis Coriandri, confertæ, spirales, sed irregulares.

1266. CONTORTUPLICATA. 799. S. testa semitereti rugosa glomerata carinata. *Fn. suec.* 2205.—*M. L. U.* 698. n. 429.\*—*Argenv. conch. t.* 29. f. D? Habitat in O. Europæo.

1266. GLOMERATA. 800. S. testa tereti decussato-rugosa glomerata. *Fn. suec.* 2207.—*M. L. U.* 699. n. 430.\*—*Gualt. test. t.* 10. f. T.—*Argenv. conch. t.* 29. f. B. Habitat in O. Europæo.

1266. LUMBRICALIS. 801. S. testa tereti flexuosa: apice spirali acuto. *M. L. U.* 699. n. 431.\*—*List. conch.* 4. s. 3. f. 1.—*Rumph. mus. t.* 41. f. I.—*Gualt. test. t.* 10. f. Q.—*Argenv. conch. t.* 29. f. I.—*Ginan. adr. 2. t.* 2. f. 14.—*Baster. subs. 2. p.* 80. t. 9. f. 3. Habitat in Indiis.

1266. POLYTHALAMIA. 802. S. testa tereti diaphana lævi rectiuscula polythalamia. *Rumph. mus. t.* 41. f. E. *Solen arenarius.* Habitat in Indiis. Testa lactea, crassitie digiti, intus passim dissepimentis hinc convexis, inde concavis interrupta, sed non perforatis.

1266. ARENARIA. 803. S. testa articula integra distincta subtus planiuscula. *M. L. U.* 700. n. 432.\*—*Bonan. recr. 1. t.* 20. f. C, B.—*Gualt. test. t.* 10. f. L, N.—*Argenv. conch. t.* 29. f. H. Habitat in Indiis.

1267. ANGUINA. 804. S. testa teretiuscula subspirali, fissura longitudinali subarticulata. *M. L. U.* 701. n. 433.\*—*Rumph. mus. t.* 41. f. H. *Solen anguinus.*—*β. List. conch.* 4. s. 3. f. 2.—*Rumph. mus. t.* 41. f. 2.—*Gualt. test. t.* 10. f. Z. Habitat in India. Polymorpha, sed distinctissima rima sua articulata, quamvis magnitudine diversissima. Variat tubo tereti et angulato.

1267. VERMICULARIS. 805. S. testa tereti subulata curvata rugosa. *Ellis. corall. t.* 38. f. 2. *Tubus vermicularis.* Habitat in O. Europæo. Animalis proboscis interior e fundo exterioris pro lubitu exseritur, referens Lichenem pyxidatum. *D. Skene.*

1267. PENIS. 806. S. testa tereti recta, extremitate radiata: disco poris cylindricis. *M. L. U.* 702. n. 434.\*—*Bonan. kirch. 1. t.* 38.—*List. conch.* 4. s. 3. f. 3.—*Rumph. mus. t.* 41. f. 7.—*Gualt. test. t.* 10. f. M.—*Argenv. conch. t.* 7. f. G. *Peniculus marinus.* Habitat ad Javam. Animal Molluscum hujus etiamnum ignotum est.

334. TEREDO. Animal Terebella: maxillæ duæ calcareæ, hemisphæricæ, antice excisæ, subtus angulatæ. Testa teres, flexuosa, lignum penetrans.

1267. TEREDO NAVALIS. 807. *Fn. suec. Teredo intra lignum testa flexuosa.*—*Vallisn. nat. 2. t.* 4.—*Sellii monogr. ultraj.* 1733. quart. t. 1.—*Planc. conch.* 17. n. 2. Habitat intra lignum Navium et palorum marinarum; calamitas navium ex Indiis in Europam propagata.

335. SABELLA. Animal Nereis. Os ringens. Tentacula duo crassiora pone caput. Testa tubulosa, contexta ex arenulis, confertim membranæ vaginalis impositis.

1268. SCRUPOSA. 808. S. testa solitaria libera simplici curvata: granis lentiformibus nitidis. Habitat in Indiis. Testa subulata, obtusa, modice curva, crassitie pennæ cygneæ et ultra, constructa ex arena lentiformi, alba, polita, magnitudine conformi.

1268. GRANULATA. 809. S. testa solitaria libera simplici curvata; granis arenaceis fuscis. Habitat in Oceano septentrionali, locis profundis. *J. G. Konig*. Testa crassitie pennæ Anserinæ, obscuri coloris.

1268. SCABRA. 810. S. testa solitaria basi fixa, simplici curvata: granis radiato-scabris. *Act. petrop.* 1766. p. 353. t. 9. f. 1, 2. *Dentalium arcuatum spongiosum superficie tuberculis contiguis exasperata*. Habitat in O. Americano.

1268. RINGENS. 811. S. testa subramosa fixa erecta. *Syst. nat.* 10. p. 788. n. 703. *Serpula ringens*.—*Baker. micr. t.* 8. f. 2–5.—*Baster. subs.* 1. p. 80. t. 9. f. 4.—*Schæff. minogr.* 1755. t. 1, 2. *Blumen-polypen i syssen Wasser*.—*Pall. zooph.* 46. *Brachionus tubifex*. Habitat in Europæ lacubus; minutissima. Testa sæpe ramum unum alterumve cum animalculo exserit; utrum vero hic ramus sit progenies propria ex animali ramificante, aut pullus innatus, vix dicam.

1268. ALVEOLATA. 812. S. testa composita concamerationibus numerosis poro communicantibus. *Syst. nat.* 10. p. 790. *Tubipora arenosa*.—*Ellis. cor.* 90. t. 36. *Tubularia arenosa anglica*. Habitat in Oceano Britannico, gregaria, ex arenulis formans nidum communem, concamerationibus compositum. Genus hoc multa habet communia cum Nereidibus, sed et os et tentacula oris diversissima; at tentacula duo pone caput crassiuscula differunt, ut testam, artificialem licet, taceam, quæ inædificata membranæ vaginanti, animalculo propriæ.

1269. CHRYSODON. 813. S. testa subcylindrica testaceo-papyracea. *Berg. act. stockh.* 1765. p. 228. t. 9. f. 1–3. *Teredo Chrysodon*. Habitat in Oceano ad Cap. b. Spei.

1269. PENICILLUS. 814. S. testa membranacea erecta radicata. *Syst. nat.* 10. p. 788. n. 702. *Serpula penicillus*.—*Rond. ins.* 2. p. 76.—*Ellis. cor.* 92. t. 34. *Corallina tubularia melitensis*.—*Baster. subs.* 2. p. 178. t. 9. f. 1. Habitat in M. Mediterraneo.

## MANTISSA.

544. LEPAS DIADEMA. *Syst. nat.* 2. p. 1108. n. 13. Testa reliquis major, convexo-cylindrica. Valvulæ 6 cuneatæ, verticales, quasi ex 4 cylindris: singulæ connatæ transverse rugosæ rugis scaberrimis; interstinctæ sunt hæ valvulæ spatiis contrariis, lævibus, impressis, vix transverse striatis. Cavitas testæ duplex: superior et inferior baseos. Superior urceolaris, unilocularis, basi descendens in inferiorem. Inferior urceolaris, cujus latera ex sexies tribus loculis. Locula singula distincta dissepimentis propriis, nec simplicibus, sed duplicatis.

544. LEPAS PALMIPES testa erecta conica, valvulis basi palmatis. Habitat in Oceano. Testa pisi majoris, alba, conica, depressiuscula. Valvulæ 4 s. 6, læves, basi divisæ ad medium digitis 5 s. 6. Operculum quadrivalve, obliquum.

544. LEPAS GALEATA testa galeata, apertura laterali. Habitat inter caules ramosve Gorgoniæ. Testa cymbiformis, lævis, ex valvulis variis coalita. Apertura rhombea, lateralis.

544. SOLEN DIPHOS testa ovali recta lævi, nymphis prominentibus. Habitat in India. Testa simillima S. radiato, violacea radiis albis tantum duobus, nec quatuor. Margo montis veneris obtusus, retusus, nec exsertus. Costa interius nulla. Nymphæ prominentes, nec retusæ. Cardo unidentatus.

544. CARDIUM LITHOCARDIUM testa cordata subtrilatera valvulis transverse sulcatis: antice longitudinaliter striata. Habitat . . . inter Petrificata. Testa aliquatenus similis C. hemicardio, at non quadrilatera. Valvulæ antice carinatæ, pone carinam transverse remote parallele sulcatæ sulcis acutis. Carinæ crenulatæ. Vulva ovata: mons veneris planiusculus, longitudinaliter crenulato-striatus cum carinula altiore. Nates approximatae.

545. VENUS PUERPERA testa cordata subrotunda: striis membranaeis decussatis, labiis flexuosis. *Gualt. test. t.* 83. *f. F.*—*Argenv. conch. t.* 26. *f. F.* Habitat in India orientali. Testa magnitudine pugni, ponderosa, subrotunda, gibba, pallida s. subferruginea, antice fuscata: striis transversalibus submembranaceis; longitudinalibus obsoletioribus. Color intus supra vulvam violaceus. Vulva (non excisa) sub nymphis retractis. Labia superne incumbentia. Anus ovatus. Margo crenulatus. Affinis V. reticulatæ.

545. VENUS RUGOSA testa cordata sulcata rugis transverse striatis, ano minutissimo subrotundo. Habitat . . . Testa magnitudine pollicis, cinerea, albo variegata, crassa, rotundata: sulcis 16, longitudinalibus, parallelis: rugis teretiusculis, transverse striatis. Vulva simplex. Anus puncti instar, ferrugineus. Nates subrecurvatæ. Margo plicatus.

545. *VENUS TRIPLA* testa subtriangulari lævi antice posticeque retusa. Habitat . . . Testa lævissima, magnitudine extimi pollicis, retusa s. ani regione versus vulvæ regionem compressa, ut fere triangulari; adeoque latus anterior et posterior respectu ad ipsam testam perpendicularia. Fornix et latus posterior intus violacea. Vulvæ vix vestigium. Nymphæ latentes, angulatæ, solidæ. Anus minutus. Margo integerrimus.

546. *VENUS SUCCINCTA* testa cordata sulcis transversis remotis excavatis, margine crenulato. Habitat . . . Testa magnitudine extimi digiti, subrotundo-cordata: sulcis transversis, remotis, 14: rugis distantibus, subreflexis, obtusis. Vulvæ rima excisa. Anus ovatus, impressus. Margo interior crenulatus.

546. *VENUS TUMIDULA* testa orbiculata gibba, sulcis transversis remotis obsoletiusculis. Habitat . . . Testa suborbiculata, gibba: sulcis transversis, parallelis, distantibus, obsoletioribus. Vulva rima simplici. Anus impressus, rhombo-excavatus. Margo integerrimus.

546. *VENUS COMPRESSA* testa subcordata compressissima transverse sulcata. Habitat . . . Testa cordato-ovalis, compresso-planiuscula: rugis transversis, remotis, parallelis. Vulva linearis, subexcisa. Anus linearis, subexcisus, vulvæ simillimus. Margo integerrimus.

546. *CHAMA RUGOSA* testa suborbiculata, sulcis profundissimis, rugis subimbricatis, margine dupliciter plicato. Habitat . . . Testa magnitudine extimi digiti, gibba, crassa, alba: sulcis 30, profundis, parallelis. Rugis compressis, dorso subimbricatis: squamis obsoletioribus, distantibus, numerosis. Margo interior plicatus, obtusus; exterior unguibus, eminentibus, concavis, e ruga eductis. Cardo sulcis 2 s. 3, obliquis, declinatis versus vulvam.

546. *CHAMA GRYPHICA* testa obliqua lacuna laterali, rugosa, carinis collo dentato. Habitat in Barbaria. Testa magnitudine pugni, facie omnino Anomiæ gryphi, ponderosissima, crassissima, transversim rugosa, latere altero latiore lacuna lata longitudinali distincta. Cavitas parva, valde fornicata. Nates oblique versus anum incurvatæ. Anus longitudinaliter concavus. Vulva longitudinaliter canaliculata, obliqua versus nates. Cardo Chamæ, dente obtuso pluribus striis transversim secto, ut in *Ch. arcinella*.

547. *OSTREA PES-LUTRÆ* testa æquivalvi inauri cuneata, plicis senis obtusis. *Gualt. test. t. 74. f. CC.—Argenv. conch. t. 27. f. A.* Habitat . . . *List. conch. t. 171.* Testa obovato-cuneata, purpurascenti pallidoque variegata, longitudinaliter subtilissime striata, plicata: plicis sex (præter laterales solitarios breviores), æqualiter distantes, apice prominentes. Margines laterales assurgentes versus cavitatem, quasi plica minore. Auriculæ vix ullæ s. altera minuta.

547. *SPONDYLUS ANTIQUATUS* testa orbiculata longitudinaliter sulcata porcis squamosis. Habitat . . . Testa antiquata, magnitudine extimi pollicis, suborbiculata, nivea, (non plicata,) dorsis sulcorum

æqualiter granulatis, quasi crenulato-serratis. Margo interior subcrenatus quasi unguibus alternis, duplicatis. Cardo Spondyli.

547. ANOMIA SANDALINUM testa turbinata dorso plana, cavitate striata, operculo plano hemisphærico. *Conchita Anomia eifliaco-juliensis sandalinum referens. Mus. Hypsch.* Habitat . . . fossilis Germaniæ. *L. B. Hüpsch. et D. Tidstrøm.* Testa turbinata, solida, crassa, magnitudine extimi pollicis, figura proxima Madreporæ turbinatæ, sed dorso plana. Cavitas ambitu hemisphærica, striata a centro ad peripheriam. Margo dorsalis cardinis rudimento. Operculum hemisphæricum, planum, concentrice striatum.

548. MYTILUS PHOLADIS testa oblonga antice obtusiore rudi transversaliter rugosa. *It. vgoth. t. 5. f. 22.* Habitat in Oceano septentrionali. Testa magnitudine Fabæ, rudis, oblongiuscula, antice obtusata, exterius subretusa, transversaliter subrugosa, a natibus ad angulum anticum dorsata obsolete, vix utraque extremitate clausilis. Cardo edentulus aut denticulus obsoletus.

548 MYTILUS STRIATULUS testa subtilissime striata, cardine terminali unidentato. Habitat in Oceano septentrionali. Testa magnitudine extimi pollicis, sublunata, antice dilatata, subdiaphana, grisea, subtilissime striata, striis, si advertas, subcrenatis. Margo extrorsum subtilissime crenatus.

548. CYPRÆA CERVUS testa subturbinata testacea, maculis pallidis rotundis sparsis, linea pallida simplici longitudinali. *Bonan. recr. 3. t. 267.—Regenf. conch. t. 10. f. 38.* Habitat . . . Testa ovato-oblonga, testacea, adspersa punctis majoribus, confertis, albidis. Linea pallida, longitudinalis, sublateralis, indivisa. Cauda s. postice depressa in marginem acutum. Dentes fuscii. Spiræ mucro quasi testæ substantia oblinitus.

548. CYPRÆA PUNCTATA testa umbilicata alba punctis testaceis. Habitat . . . Testa magnitudine C. ziczac, vix marginata, retuso-umbilicata, ovata, alba, adspersa punctis testaceis, vagis, subæqualibus, distantibus. Margo vix marginatus, notatus ordine punctorum similitum minimorum. Os album.

548. VOLUTA FILARIS testa emarginata subturrita tereti decussatim striata succincta filis rubris, columella triplicata. Habitat . . . Testa fusiformis, longitudine extimi pollicis, decussatim subtilissime striata, pallida. Anfractus cincti quasi filis rubris, moniliformibus, tribus, at in infimo anfractu 12. Faux labiis simplicibus, alba. Columella triplicata.

549. BUCCINUM? CINGULATUM testa ovata, cingulis subcanaliculatis. Habitat in Islandia. *Koenig.* Testa proxima M. Doliario, magnitudine pruni, ovata, cinerea: cingulæ ventris 3 (spiræ 2), admodum elevata, levia, antice et postice s. lateribus fere canaliculata, obtusissima. Apertura obovata: columella planiuscula. Labium sub cingulis plicatum.

549. STROMBUS MINIMUS testæ labro retuso gibbo, ventre spiraque plicato-nodosus, apertura bilabiata lævi. *Rumph. mus. t. 36. f. P. Epidromis minima.* Habitat in India orientali. Testa simillima S. urceo, sed minor. Dorsum testaceum. Faux lævis, flava, nec striata. Labium utrumque albidum.

549. STROMBUS CLAVUS testa turrita lævi, cauda subulata, labro simplici. *Argenv. conch. t. 13. f. A.* Habitat . . . Testa turrita, digito brevior, glabra, anfractibus circa 13, quorum duo infimi læves; reliqui longitudinaliter striati, sed anfractus infimus subtus transversim striatus. Cauda filiformis s. subulata, rectissima, glabra,  $\frac{1}{3}$  totius. Apertura ovata, lævis.

549. BUCCINUM RUGOSUM testa ovata acuminata, cingulo tuberculoso, cauda prominente. *Bonan. recr. 3. t. 160.* Habitat . . . Testa magnitudine ovi, alba: striis transversis, elevatis, numerosissimis, confertissimis: quarum sexta (a sutura spirali) crassior, tuberculis constituens cingulum. Spira omnino ovata, acuta. Cauda exserta, leviter adscendens. Labrum marginatum, intus inæqualiter tuberculatum. Labium inferius late explanatum, in ipsa fauce inæquale. Crypta, inter testam et labium interius, profunda.

550. BUCCINUM MONILE testa turrita anfractibus bifidis: inferiore sulcato, superiore moniliformi. Habitat . . . Testa subulata, albida s. subflavescens: anfractus bifidi: inferior latior, longitudinaliter obtuse sulcatus; superior angustus, ex catena nodulorum, dimidium monile referens.

550. BUCCINUM GEMICUM testa turrita, anfractibus bifidis, substriata superiore protuberantiore. Habitat . . . Testa subulata, alba. Anfractus bifidi: inferior latior, transversaliter obsolete striatus: stria superiore crassiore. Anfr. superior angustus, sed magis elevatus, lævis, obtusus; primo intuitu videntur cingula quasi ex duplici filo convoluta.

550. BUCCINUM CINGULATUM cingulis tribus elevatis supra infraque canaliculatis. Habitat in Islandia. *D. Koenig.* Testa magnitudine pruni minoris, ovata, cinerea, transverse striata: ventrem cingunt cingula 3, spiram 2. Cingula hæc maxime elevata, lævia, extus latiora s. utrinque canaliculata. Anfractus supra planiusculi. Apertura obovata: columella planiuscula. Murici Doliario proxima.

550. BUCCINUM PROXIMATUM testa turrita, anfractibus bifidis: inferiore substriato, superiore filiformi. Habitat . . . Testa subulata, nitida. Anfractus bifidi. Anfractus inferior latior, transversaliter obsolete striatus. Anfractus superior filiformis, elevatior; primo intuitu videntur anfractus simplices, superne stria elevata, obtusa, gemina.

551. MUREX SUCCINCTUS testa ovata cincta striis elevatis distinctis rubris, labio varicoso. *Bonan. recr. 3. t. 47.* Habitat . . . Testa magnitudine Cerasi, ovata, anfractibus 3 s. 4, obtusa. Anfractus ventricosi, pallidi, cincti lineis elevatis, rubris, 7, (at ventris 13, præter caudæ) distinctis, sed in spira reticulatis. Labrum varicosum, arti-

culatum; interne ordine punctorum rubrorum. Labium interius fere nullum. Cauda integra, subcylindrica, longitudine fere ventris, subadscendens, striis similibus, obliquis.

551. MUREX CONTRARIUS testa patulo-caudata contraria, striis geminatis. Habitat in Oceano Europæo. Testa simillima M. antiquo, rudis, sed perversa. Anfractus striis transversis, elevatis, æqualibus, binis, interjecta minore, lineola elevata.

551. NERITA LACTARIA testa sulcata alba, labiis utrisque dentatis. Habitat . . . Testa subglobosa, alba, sulcis distantibus, numerosis. Apex eminens, flavescens. Labium exterius dentibus 6, distinctis: extremis validioribus. Interius subgibbosum, longitudinaliter rugosum, dentibus 4, inflexis.

551. PATELLA NOACHINA testa conica, vertice recurvato anticeque fisso. Habitat . . . Testa similis P. fissurellæ, conica, compressiuscula, striata striis circiter 20 elevatis. Vertex acutiusculus, recurvatus, antice fissura s. rima notatus. Cavitas sub rima verticis lacuna marginata, protuberante.

552. PATELLA MILITARIS testa integra conica acuminata striata, vertice hamoso lateraliter recurvo. Habitat . . . Testa similis P. hungaricæ, magnitudine seminis Cannabis, pellucida, tenera, absque epidermide. Apex spiraliter revolutus, sed ad alterum latus flexus.

THE END.



# ILLUSTRATIONS.

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## PLATE I.

Fig.

1. *Solen viridis*.
- 2, 3. *Venus læta*.
4. *Arca scapha*.
5. *Tellina trifasciata*.
6. *Tellina inæquivalvis*.
7. *Venus prostrata*.
8. *Cardium lævigatum*.

## PLATE II.

1. *Mytilus anatinus*.
2. *Mytilus barbatus*.
3. *Mactra striatula*.
4. *Mytilus unguatus*.
5. *Buccinum prærosum*.
6. *Murex cariosus*.
7. *Ostrea perna*.
8. *Mactra stultorum*.

## PLATE III.

1. *Turbo acutangulus*.
2. *Turbo imbricatus*.
3. *Turbo variegatus*.
4. *Patella unguis*.
5. *Nerita glaucina of the Systema*.
6. *Turbo obtusatus*.
7. *Trochus maculatus*.

Fig.

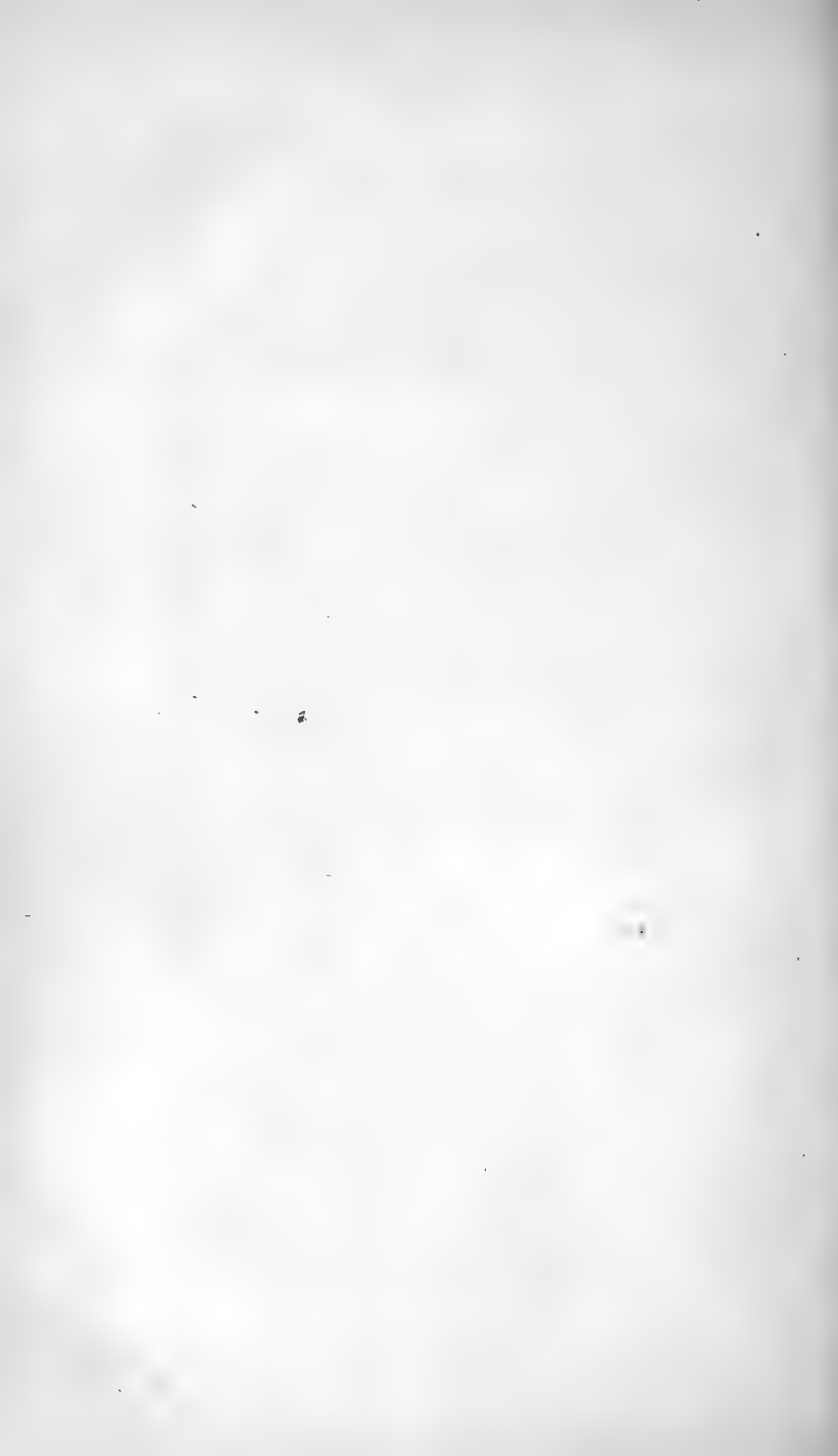
8. *Nerita glaucina of the Fauna Suecica*.

## PLATE IV.

1. *Venus flexuosa*.
2. *Anomia plicatella*.
3. *Arca antiquata*.
4. *Strombus tuberculatus*.
5. *Voluta ruffina*.
6. *Turbo muscorum (magnified)*.
7. *Helix Haliotoidea*.
8. *Nerita chamæleon*.
9. *Patella fusca*.
10. *Patella nubecula*.
11. *Patella mammillaris*.
12. *Patella pectinata*.

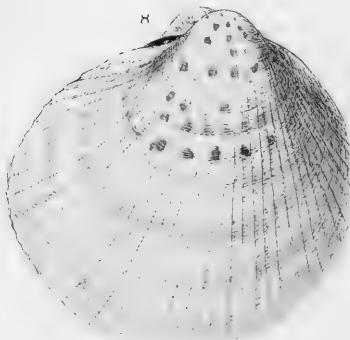
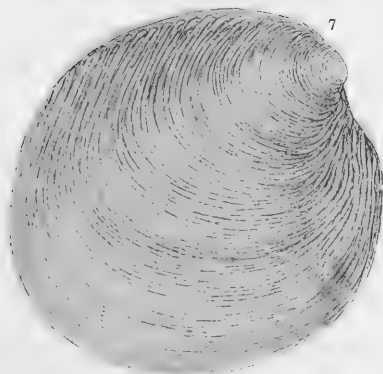
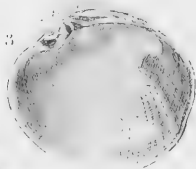
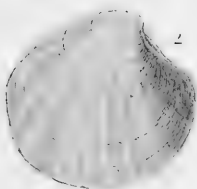
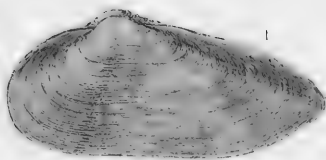
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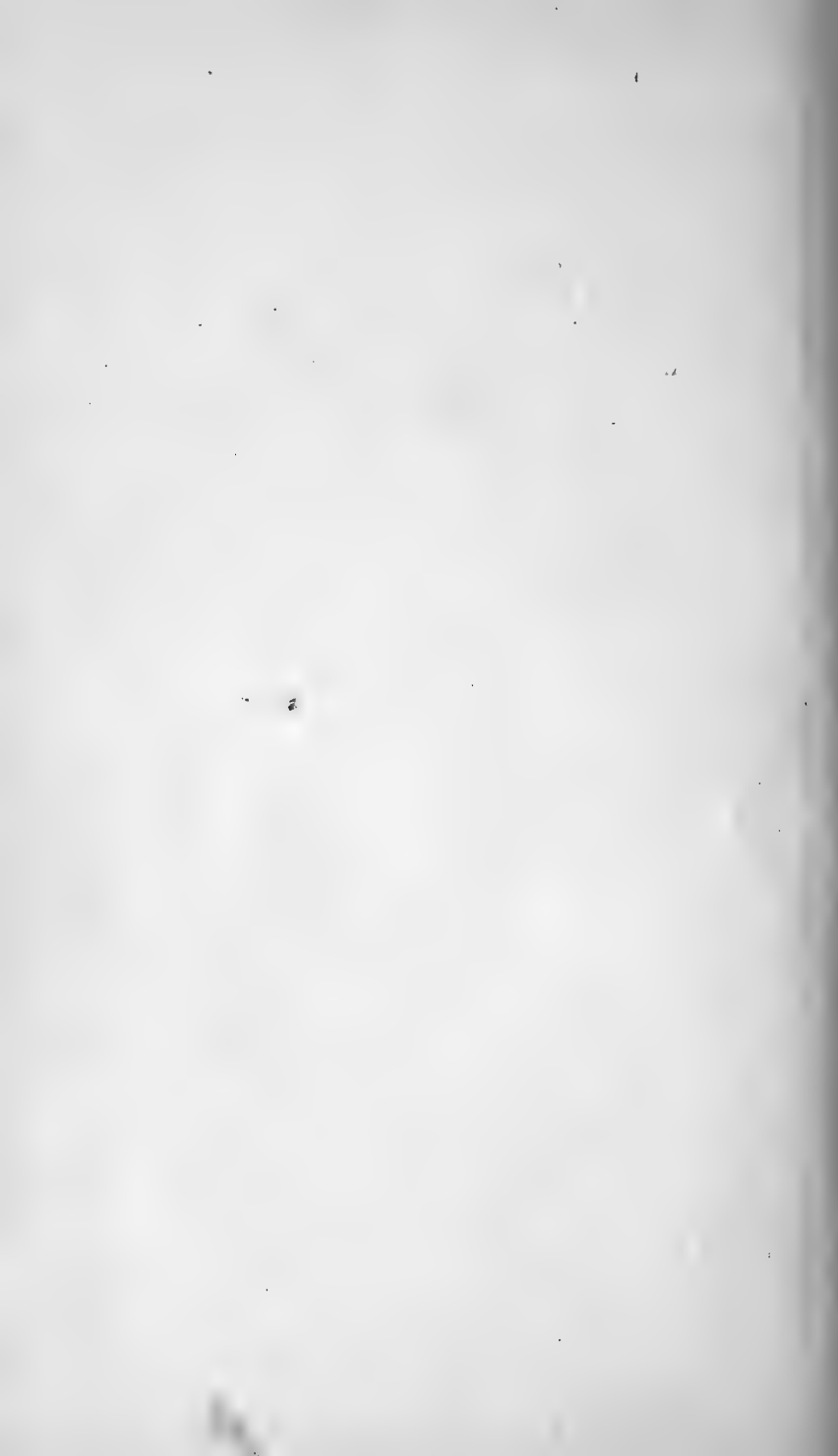
- 1, 2. *Cypræa succincta*.
3. *Strombus oniscus*.
4. *Nautilus raphanistrum*.
5. *Murex cochlidium*.
6. *Trochus cruciatus*.
7. *Trochus striatus*.
8. *Turbo striatulus*.
9. *Patella cærulea*.
10. *Nerita corona*.
11. *Chama gryphica*.









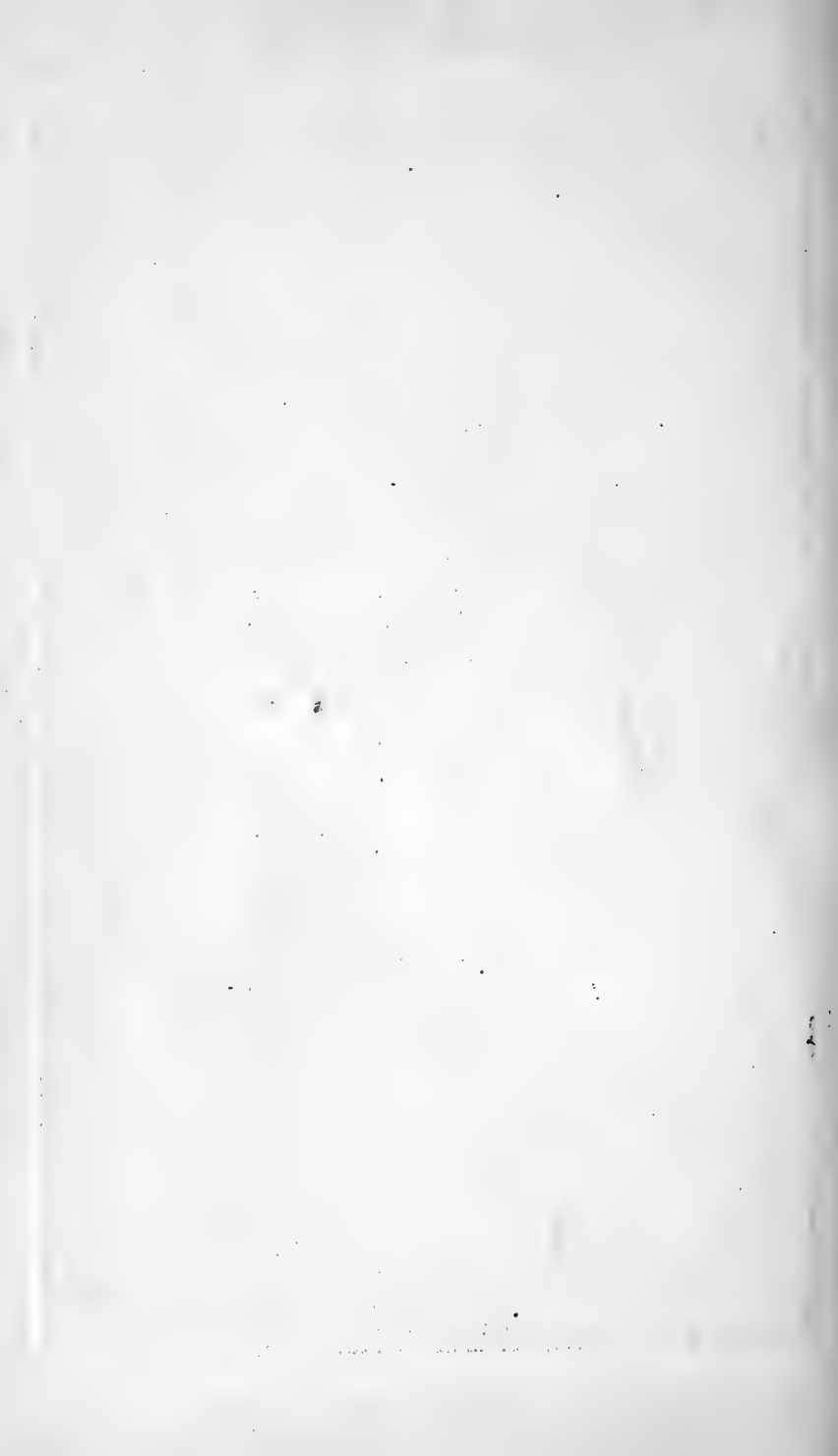






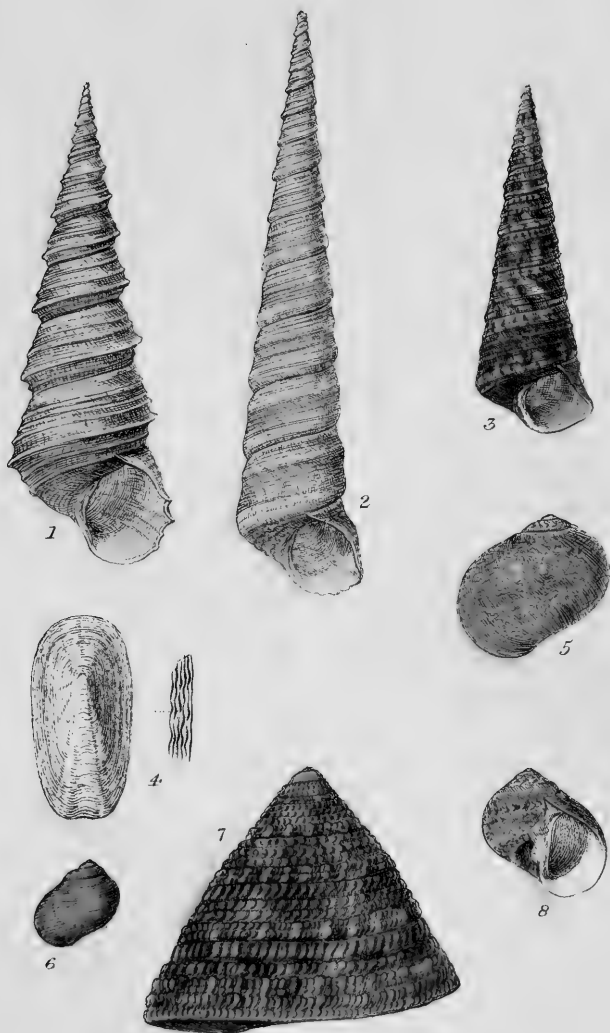


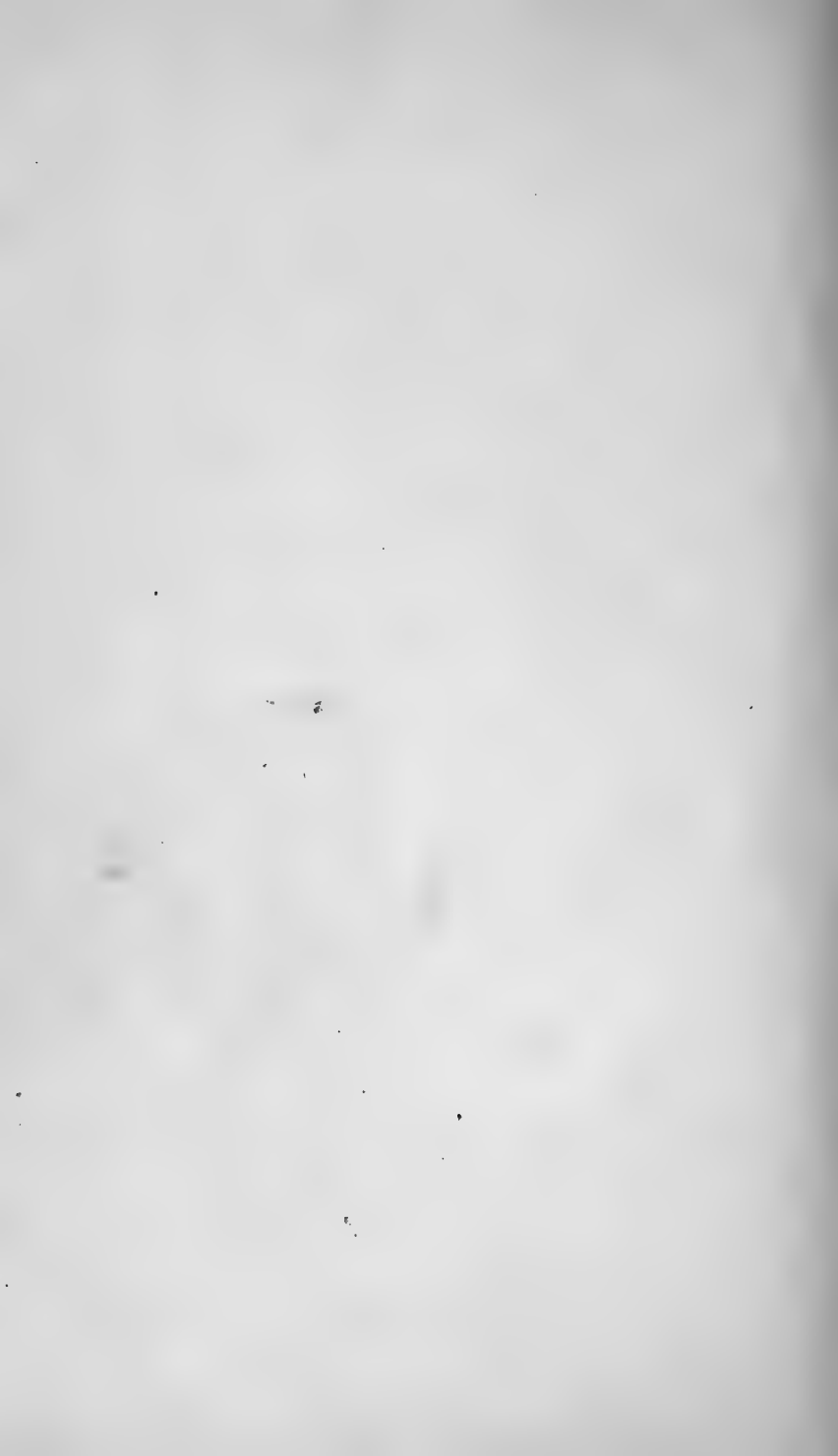


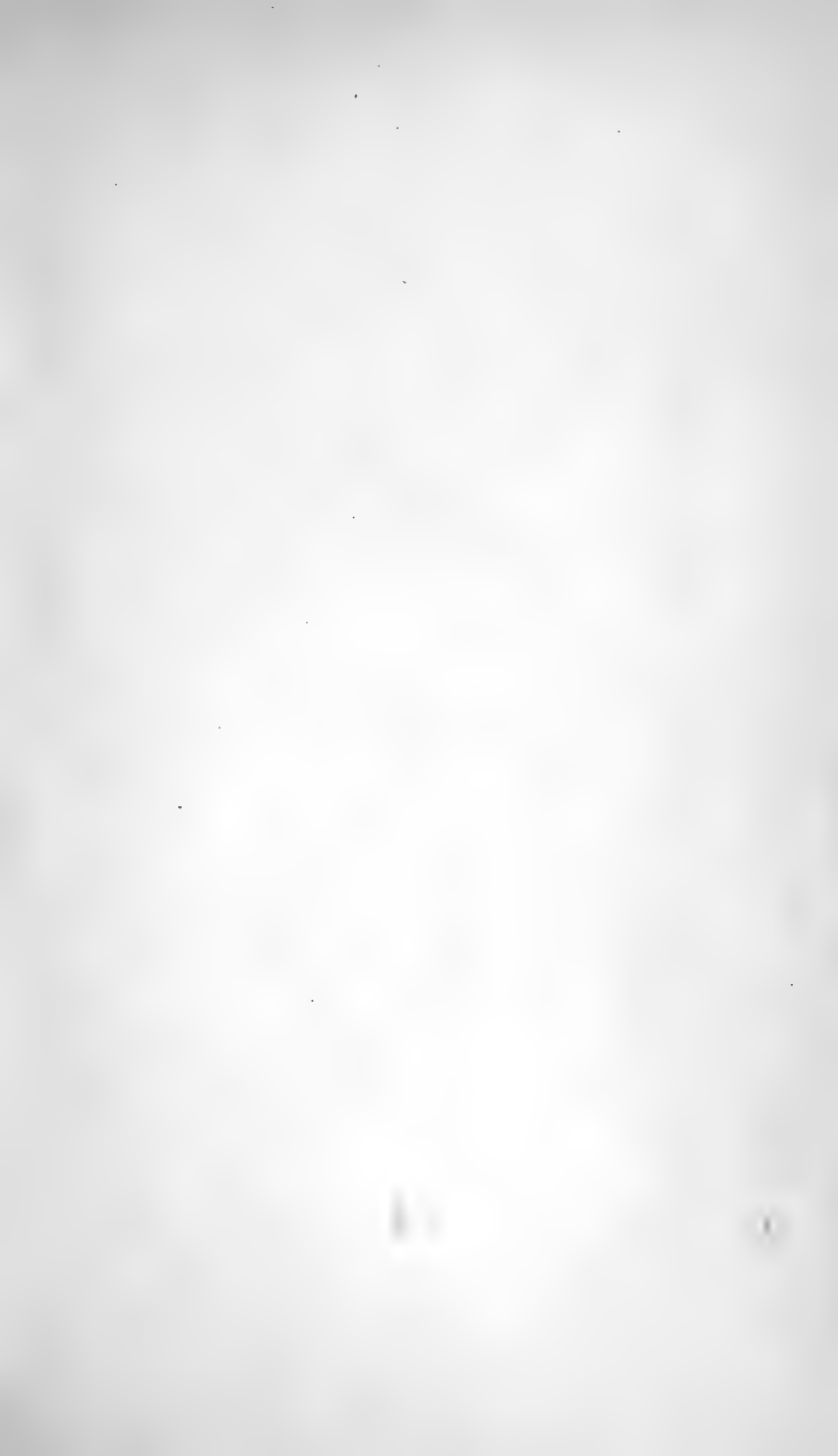


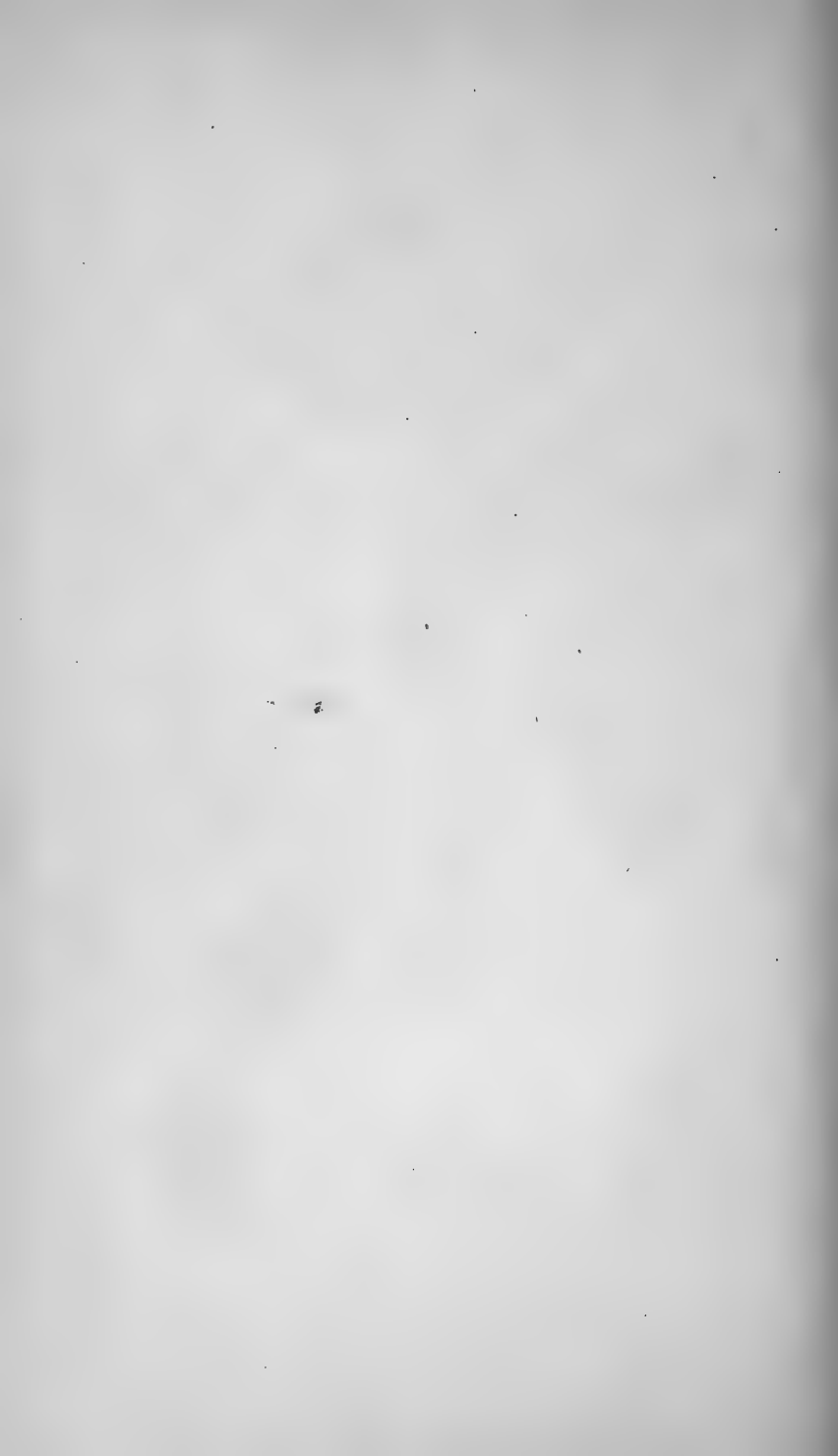




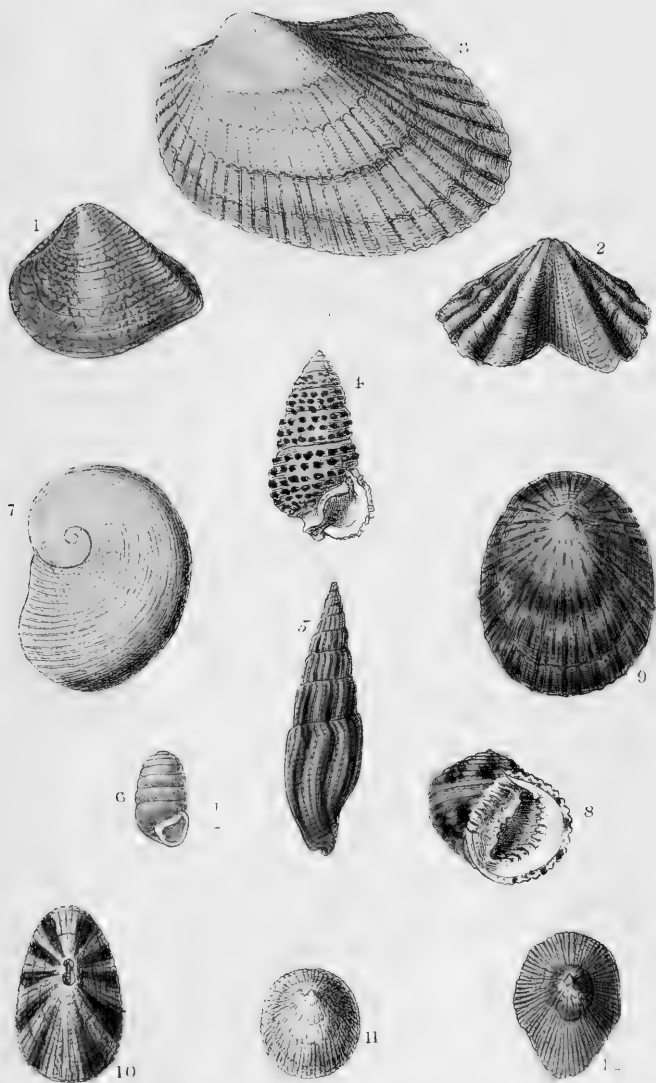






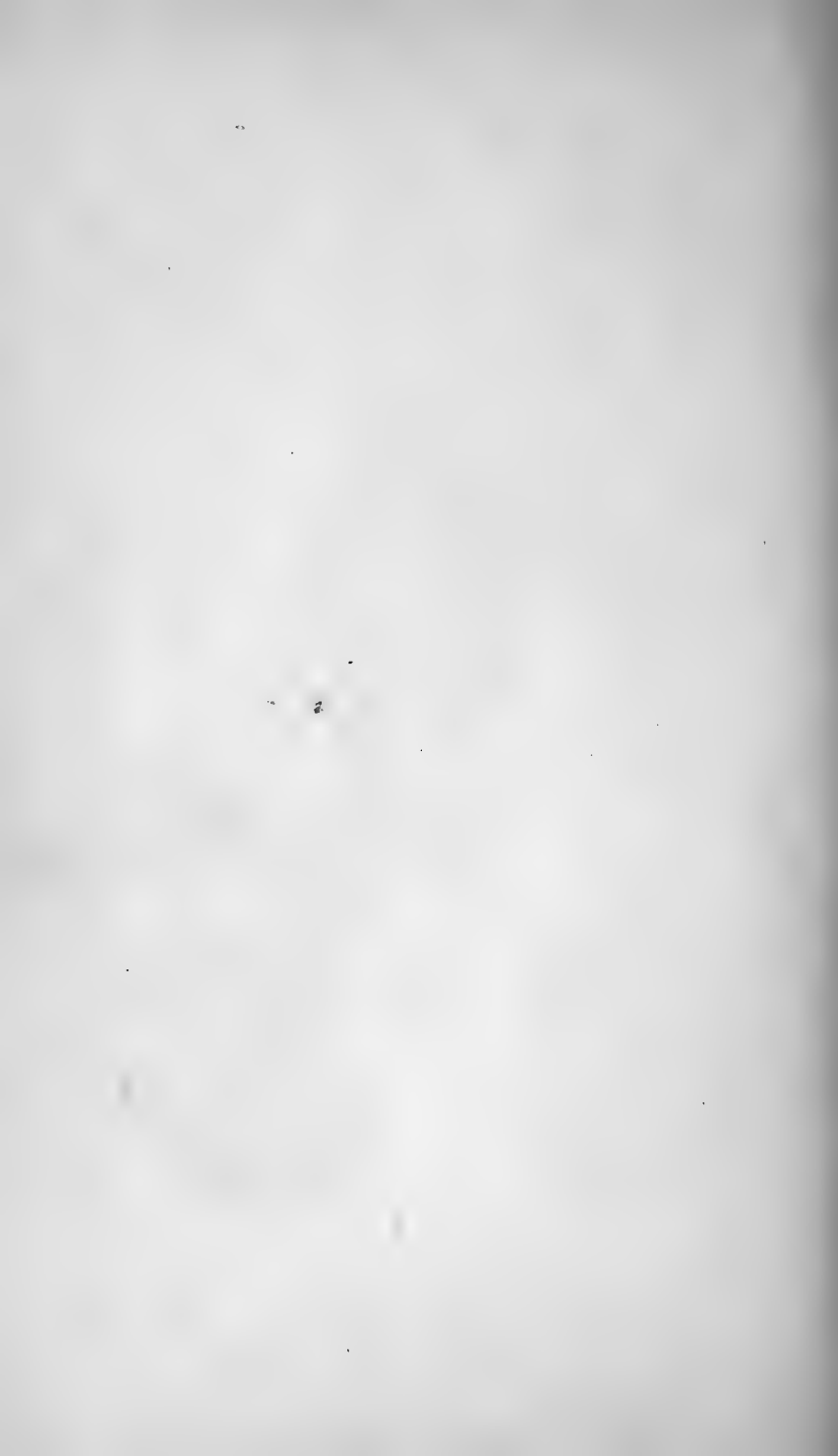


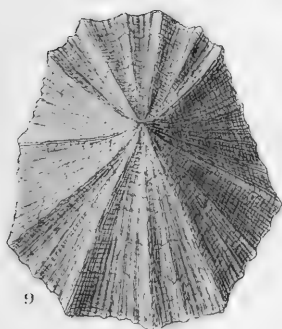
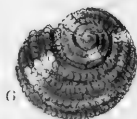
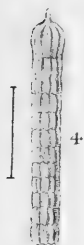












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